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**COMMERCIAL VESSELS**

**Summaries of Reports of Investigations  
into Marine Casualties and Accidents  
Aboard Ships**

**Issue No. 3**

**January 1988**

### Summaries of Commercial Vessel Marine Casualties and Accidents

This publication summarizes investigation reports on marine casualties and/or marine accidents involving commercial vessels and other craft, excepting fishing vessels, which were investigated by the Marine Casualty Investigation Division of Transport Canada and is published three times a year. There is another publication covering fishing vessels.

#### Note:

1. A glossary of terms and abbreviations used can be found at the end of this publication.
2. Unless stated otherwise, all times mentioned in this publication are local times.

The full report of the summaries contained herein may be obtained by writing to:

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Their contents may be deficient and misleading if used in any other process and are not to be used or admitted in evidence in any legal proceedings, either civil or criminal, arising out of any casualty described therein. The statements, opinions and findings in the reports and summaries are those of the Marine Casualty Investigations Division only and do not constitute admissions made by or on behalf of Her Majesty the Queen in right of Canada.

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**"GENERAL VARGAS"**

**Disappearance of crew member from the vessel, St. Lawrence Seaway, April 29/30 1987.**

---

**Summary**

The "GENERAL VARGAS" is a three-hold, three-hatch bulk carrier with all superstructure, accommodation and the machinery spaces located aft. She is of 8,341 gross tons and was built in 1977. The vessel is registered in the Philippines and, with the exception of the European super-cargo and electrician, she is manned by Philippine nationals.

At 0719, April 30, 1987, Seaway Traffic Control at Iroquois received a message from the "GENERAL VARGAS", then proceeding upbound in the Seaway, that a crew member was missing, presumed overboard. It was later established that the crew member disappeared sometime between 2300, April 29 and 0545, April 30. Between these times the vessel had travelled approximately 45 miles through the Seaway in the Beauharnois to Eisenhower locks section and had transited both the Snell and Eisenhower locks.

The missing person was Mr. Amar C. Pedro, a messman, and at 0600, April 30, a search was initiated on board the vessel but he was nowhere to be found. His slippers were discovered on deck near the port side bulwarks and a note written by him was found in another crew member's cabin.

The personal effects of Mr. Pedro were all found unpacked in his cabin. No flotation devices were reported missing from the vessel. He had received no cash advances whilst onboard. His passport, seaman's book and seaman's registration card were all in the possession of the master.

During his last few days on board the vessel it was established that Mr. Pedro had been in a very depressed state of mind. There is no evidence that he had made any enemies onboard amongst the crew.

Search and Rescue operations were not initiated because the appropriate organizations responsible for such operations were not directly informed at the time. Police authorities were not directly informed and no investigation was carried out by them on board the vessel.

At approximately 1230, May 29, 1987, a body was found floating in the shipping lane close to buoy D74 approximately one mile south-west of Summerstown, Ont. The body was subsequently identified as that of Mr. Pedro and the cause of death established as drowning.

### Findings

A crew member disappeared from the Philippine registered cargo vessel "GENERAL VARGAS" whilst in the St. Lawrence Seaway System, in the section between the upper Beauharnois locks and Eisenhower Lock, covering both Canadian and U.S. waters. The reason for his disappearance from the vessel can not be positively ascertained but it is probable that it was suicide although it is possible that he was deserting.

### Other Findings

Some members of the crew were aware of the man's apparent depressed state but no immediate action was taken in this regard.

The St. Lawrence Seaway Authority did not advise the Search and Rescue Organization, did not request other vessels in the vicinity to maintain a lookout, nor did they inform the local police.



**"ALIDA GORTHON"**

**Disappearance of a crew member off the south coast of  
Newfoundland, February 1, 1987.**

---

**Summary**

The "ALIDA GORTHON" is an ocean-going bulk carrier of 10,574 gross tons, built in 1977 and registered in Helsingborg, Sweden.

On January 25, 1987, the vessel departed Montrose, Scotland bound for La Baie, Quebec.

Shortly after 1600 on January 31, the officer of the 12-4 watch informed the master that the chief officer had not relieved him to take over the watch. The master proceeded to the chief officer's cabin and found him apparently under the influence of alcohol and obviously not capable of carrying out his duties effectively. Consequently, the master stood the 4-8 watch.

The chief officer's condition was apparently unchanged at 2000 and the master decided to again stand the chief officer's watch the following morning. He ordered the bridge not to awaken the chief officer for the morning watch so that he might regain his composure.

After finishing the watch at 0800 on February 1, the master went to see the chief officer in his cabin but found him absent. The master then proceeded to the crew's quarters, and, since the chief officer could not be found, he searched all the lounges. On making his way back to the bridge, he again checked the chief officer's cabin but the officer was not to be found.

Back on the bridge, the master ordered a search to be carried out throughout the vessel, on deck as well as inside the accommodation.

At 0803, a message indicating that a crew member was missing from the "ALIDA GORTHON" was transmitted to the Vessel Traffic Services Centre in St. John's, Nfld.

At 0835, the vessel was turned back to retrace her course. The wind was gale force from the NE gusting to 65 knots. The seas were 4-6 m in height and the air and sea temperatures were -2°C and -2.5°C respectively. Visibility was reduced by snow to 100-150 m.

Because there was only a remote possibility of finding a person in such rough seas and considering that the vessel, being in ballast, was making little headway into the wind, at

0910 the vessel was headed back toward La Baie.

A package of anti-depressant pills was found in the chief officer's cabin. The search on board the vessel was continued until 1100 but no further evidence to account for the disappearance could be found.

The fall overboard is estimated to have occurred between positions 46°44'N, 056°42'W and 48°16'N, 060°40'W.

To date, there has been no trace of the missing crew member.

#### Findings

On February 1, 1987, as she was proceeding through Cabot Strait, the Swedish vessel "ALIDA GORTHON" reported the disappearance of a crew member. The victim was not found and is presumed to have fallen overboard.

It would appear that:

- no one witnessed the fall overboard;
- the victim had in his possession anti-depressant medication; and
- on the eve of his disappearance, the victim had consumed alcoholic beverages and possibly anti-depressant medication.

#### Other Findings

It was reported that previously the victim's work performance had always been beyond reproach.

The possibility of recovering the chief officer from the sea was negligible because of the air and water temperatures, the prevailing weather conditions and the interval between the time at which the fall probably occurred and the time it became evident that he was no longer on board.

SECTION OF  
CHS CHART  
No. 4001

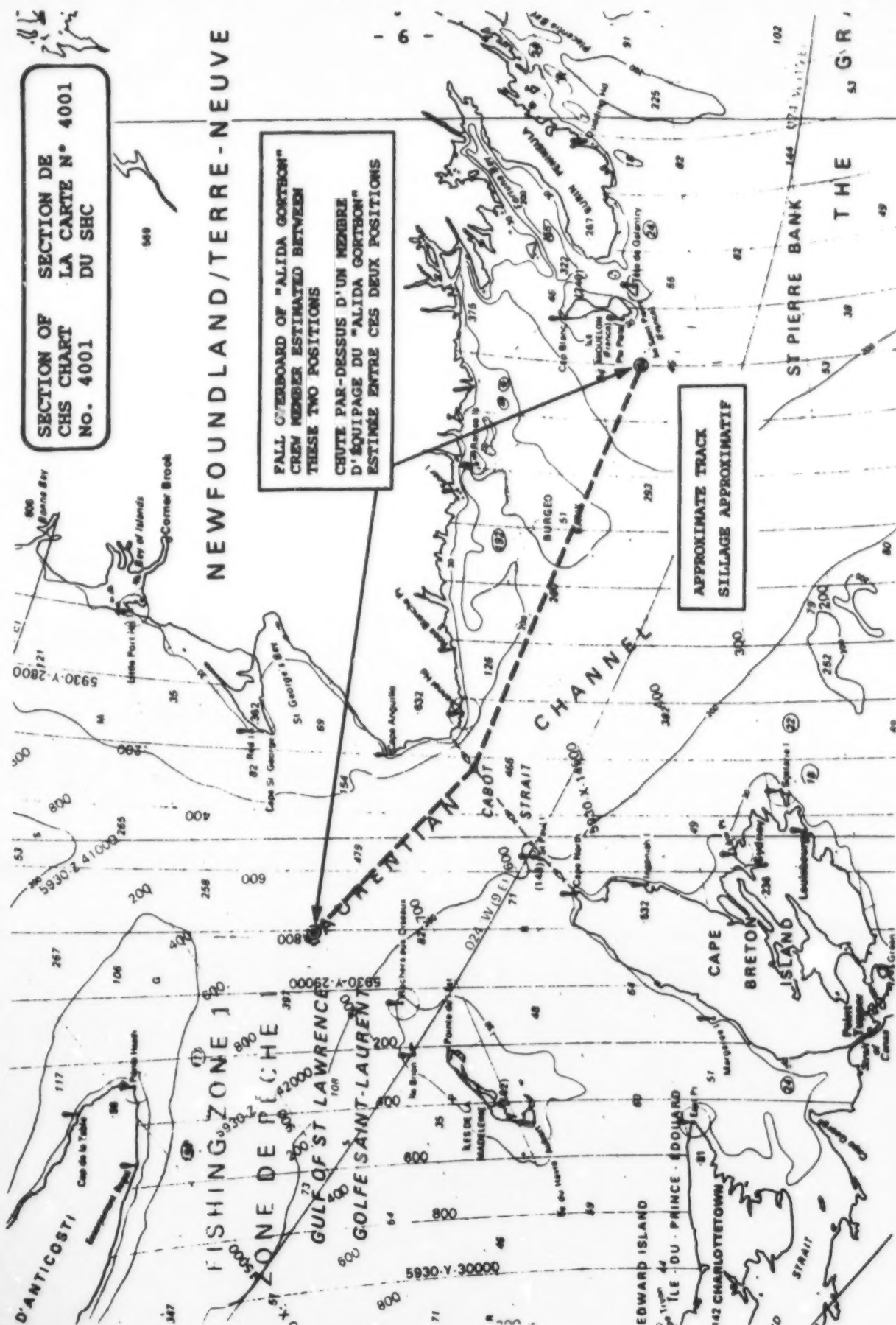
SECTION DE  
LA CARTE N° 4001  
DU SHC

## NEWFOUNDLAND/TERRÉ-NEUVE

FALL C/ERBOARD OF "ALIDA GORTHEON"  
CREW MEMBER ESTIMATED BETWEEN  
THESE TWO POSITIONS

CEUTE PAR-DESSUS D'UN MEMBRE  
D'EQUIPAGE DU "ALIDA GORTON"  
ESTIMÉE ENTRE CES DEUX POSITIONS

APPROXIMATE TRACK  
SILLAGE APPROXIMATIF





"ALIDA GORTHON"



Bottle of anti-depressant pills found near the victim's bed.  
Contenant de pilules anti-dépressives retrouvées près du lit  
du disparu

## "PIERRE RADISSON"

Disappearance of a crew member off Cape Bonavista,  
Newfoundland, March 30, 1987.

---

### Summary

On the morning of March 30, the CCGS "PIERRE RADISSON" was conducting a Search and Rescue mission off Cape Bonavista.

At 0705, the messman was called when it was discovered that he was late for work. On his arrival at the officer's mess, it was observed that his personal appearance was untidy. When he was asked to go and tidy himself up, he proceeded to his cabin where he met his room-mate who was then leaving.

At about 0735, the messman followed a crew member out onto the upper deck. After having been greeted by the crew member, the messman turned around but did not answer. Moments later, the crew member retired inside the accommodation leaving the messman alone on deck.

Meanwhile, the vessel was proceeding in a moderate sea at 16 knots. There were moderate gale winds from the north and the ice concentration was determined to be 1/10. The air and water temperatures were  $-0.5^{\circ}\text{C}$  and  $-0.3^{\circ}\text{C}$  respectively. At 0733, a Sat-Nav reading obtained, by the personnel on watch, positioned the vessel at  $48^{\circ}45.8'\text{N}$ ,  $52^{\circ}00.8'\text{W}$ .

In the days previous, some of the crew had been aware of the messman's emotionally depressed condition.

The messman did not report back to the officer's mess and when he could not be found in his cabin, a search was initiated. However, the search was unsuccessful and, at about 0750, the purser was informed of the possible disappearance of the messman. A call was broadcast throughout the vessel and, as there was no response, the search was intensified.

At 0815, the "PIERRE RADISSON" was informed by the St. John's - Marine Rescue Sub-Centre that the search and rescue operation in which the vessel was participating had been terminated. The vessel subsequently headed for the entrance to Conception Bay.

The senior engineer had been informed that the messman had been last seen in a depressed state. When he was informed that the search was still unsuccessful, at 0905, he reported the disappearance to the master as did the purser, three minutes later.

After being acquainted with the circumstances of the disappearance, at 0915, the master sounded the general alarm. All crew members mustered to their stations and after a head count at 0923, the first officer informed the master that the messman was missing.

A search was co-ordinated taking into consideration the probable area of his going overboard and the direction of wind and current. At 0945, the vessel altered course, reduced her speed to 9 knots and commenced the search. Ships proceeding in the area were requested to be on the lookout for a man overboard.

The "PIERRE RADISSON" used the co-ordinated 'creeping line search' pattern. Armed Forces helicopter No. 301 carried out an air search between 1400 and 1600. At 1900, the search was called off due to nightfall. To date, there has been no trace of the missing crew member.

#### Findings

In the early morning hours of March 30, 1987, whilst on a Search and Rescue mission off Cape Bonavista, a crew member of the CCGS "PIERRE RADISSON" was found to have disappeared.

It would appear that:

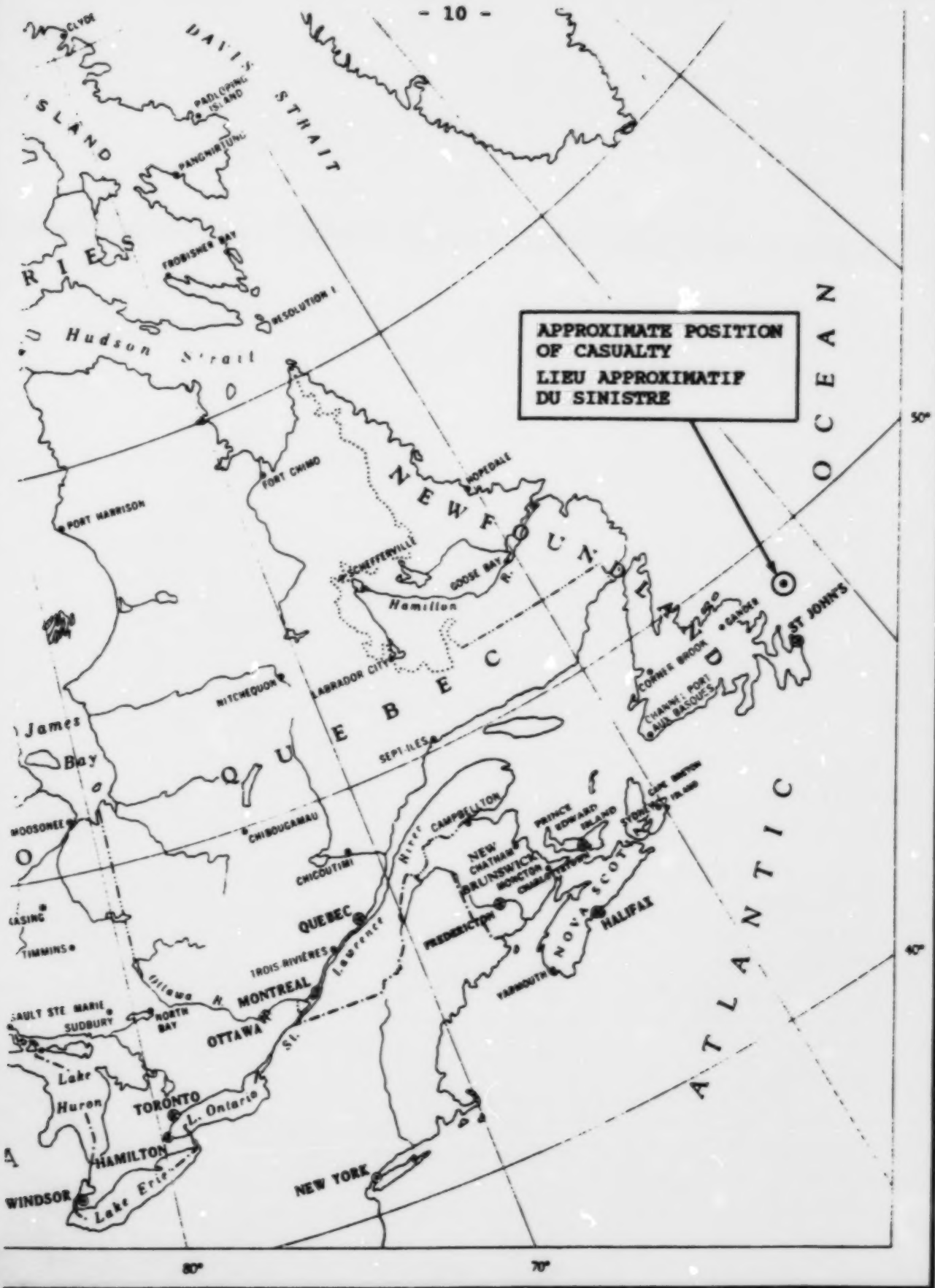
- no one witnessed his fall overboard;
- the victim had been in a depressed state for some time;
- the fall overboard was considered to be non-accidental; and
- his disappearance is not a result of the condition of the vessel but of a progressive degradation of his health.

#### Other Findings

Every possible action was taken in an attempt to find the missing person.

A very quick intervention would have been necessary to save his life because of the very cold water-temperature in the area of the disappearance.

There was an unaccountable delay before the master was informed of the disappearance overboard of one of the crew members.





Upper deck, starboard side, view looking aft.  
Pont supérieur du côté tribord. Vue vers l'arrière.



Personal effects of victim.  
Effets personnels de la victime.

**"SEA FOAM V"**

**Sinking in Knight Inlet, B.C., April 6, 1987.**

---

**Summary**

The Canadian tug "SEA FOAM V" was of wooden construction with a gross tonnage of 54.7 tons, built in Vancouver in 1938. She had been used for towing logs and barges in the Johnstone Strait area since 1979 when she was bought by her owner, who was also master at the time of the casualty.

Shortly after midnight, in the early hours of April 6, 1987, the tug departed Kumlah Island in Tribune Channel bound for Knight Inlet. She carried a crew of two, comprising the master and his wife, who was acting as deck-hand. Prior to departure the regular check was carried out on the main engine and everything in the engine-room appeared normal. Once under way, the two crew members remained in the wheel-house, the auto-pilot was switched on, as was the radar, and the VHF radio was on channel 6. The wind was from the south-east at 15 knots, the sea was choppy, visibility was good at about 10 miles, the air temperature was 6°C and the sea temperature about 7°C.

When the "SEA FOAM V" was passing south of Lady Islands the master sensed that the tug was becoming sluggish in answering the helm and he went to check the engine-room. On looking through the entrance door, he saw the engine-room filled with water to about half-way up the main engine, and, realizing that the tug was sinking, he shouted to the other crew member to get the lifejackets. After donning the lifejackets, the VHF radio was switched over to the distress channel 16, but the tug was rapidly sinking and power was lost; the crew then had to abandon the vessel before a distress message could be sent.

As the tug went down the inflatable liferaft floated free and automatically inflated with the pull on the painter as the vessel sank. However the wind carried the raft away from the two crew members who therefore swam the 300 m to shore.

A fire was lit and when daylight came the liferaft was located along the shore line nearby. Some survival gear was retrieved from the raft but attempts to attract the attention of aircraft and a fishing vessel using hand flares were unsuccessful.

At 1305 that afternoon the coastal tanker "IMPERIAL TOFINO" was in the area en route to Minstrel Island when the officer on watch saw the collapsed liferaft on the rocks. The master was immediately called and the vessel turned

around and, as the master arrived on the bridge, a hand-held red flare was sighted close to the position of the raft. One of the tanker's lifeboats was used to rescue the crew of the "SEA FOAM V" and, apart from being cold and hungry, they appeared to be in good health, being landed at Minstrel Island.

An EPIRB from the tug was found floating at the scene but it was apparently not operating; for certainty it was deactivated. A minor oil slick was reported following the casualty but this soon dissipated. The "SEA FOAM V", which was not insured, was a total loss with an estimated value of \$150,000.

#### Findings

From the scanty information and lack of evidence, it would appear that the "SEA FOAM V" sank following the flooding of her engine-room and thus it would also appear that the contributing factors to the flooding were:

- the hull was known to be leaking;
- the hull repairs requested by the steamship inspector were not completed;
- the engine-room bilges had to be kept dry by the continuous pumping of the automatic bilge pumps; and
- the high water bilge alarm bell did not operate at its intended water level.

#### Other Findings

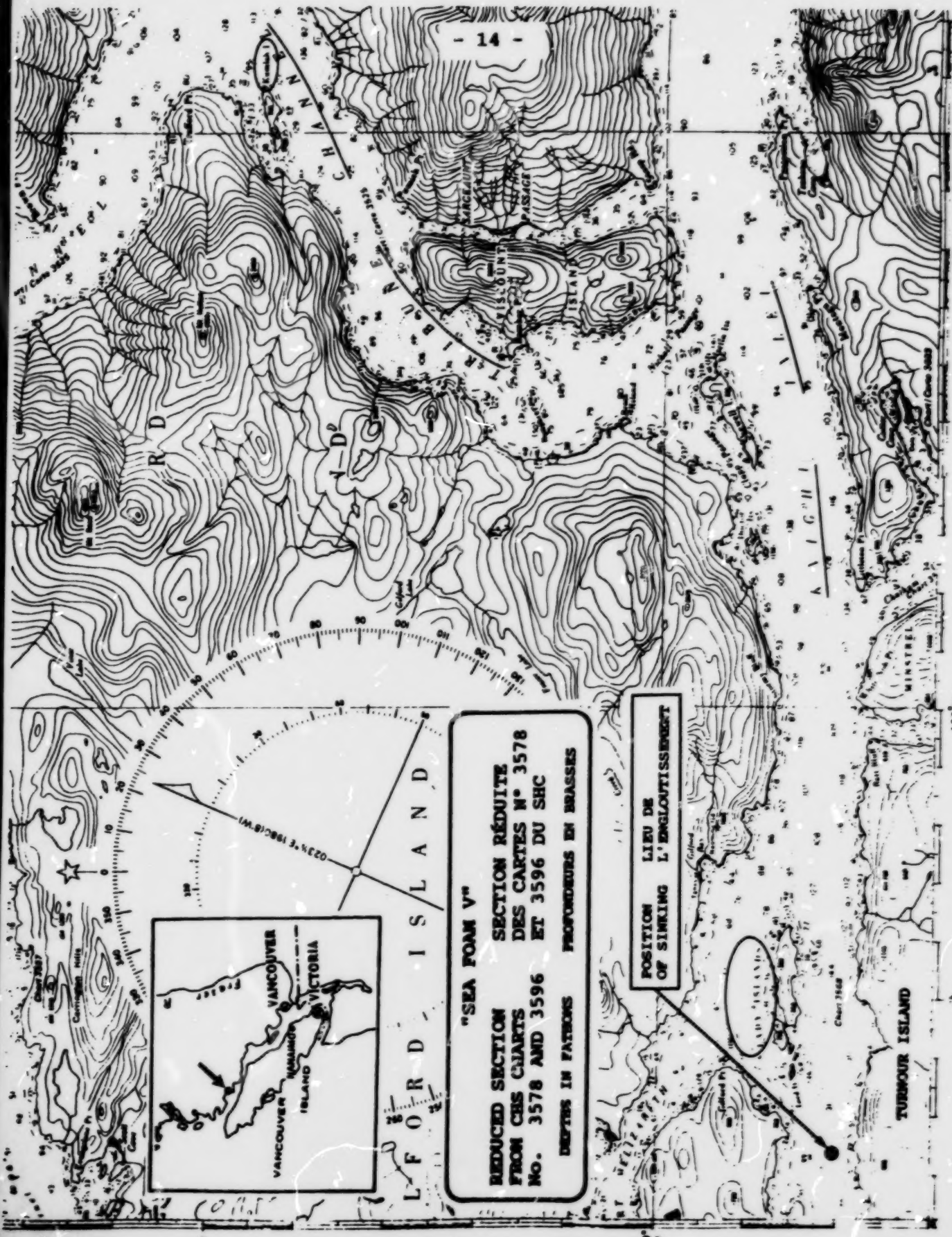
The "SEA FOAM V" was not operating with a valid Steamship Inspection Certificate as required by the Canada Shipping Act.

The annual testing and inspection of the liferaft had not been carried out as required by the Life-saving Equipment Regulations.

Immersion suits were not carried on board the tug as required by the Life-saving Equipment Regulations.

The wearing of lifejackets is credited by the crew members as probably saving their lives.

The "SEA FOAM V" did not carry an EPIB as required by the Emergency Position - Indicating Buoy Regulations.



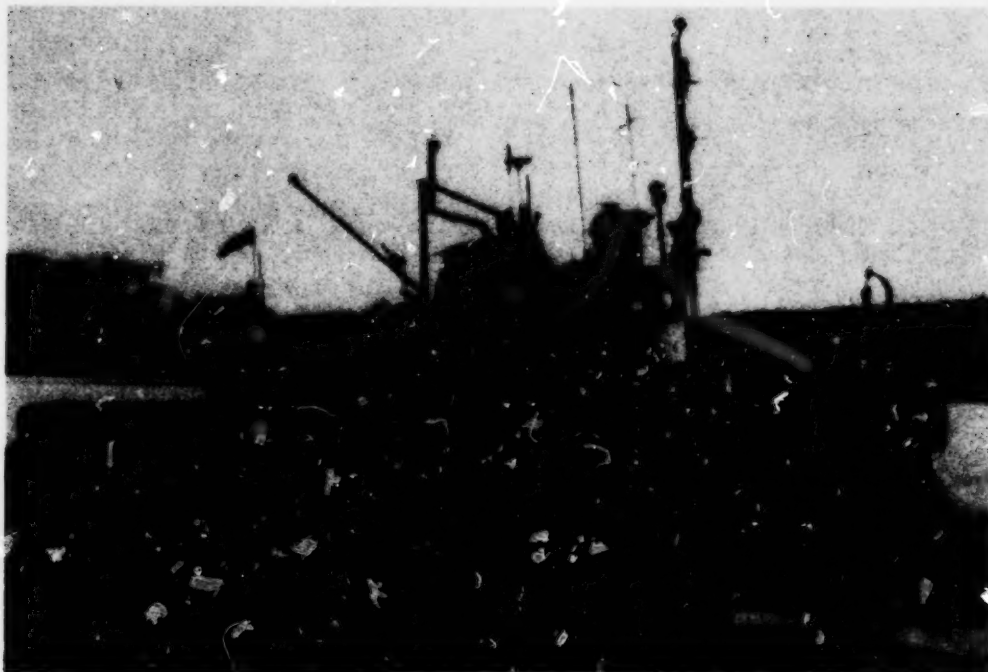
"SEA FOAM V"  
REDUCED SECTION  
FROM CHS CHARTS  
No. 3578 AND 3596  
DEPTHS IN FATHOMS  
SECTION RÉDUITE  
DES CARTES N° 3578  
ET 3596 DU SHC  
PROFONDEURS EN BRASSES

POSITION  
OF SINKING  
LIEU DE  
L'ENGLOUTISSEMENT



TURBOUR ISLAND

126 20



"SEA FOAM V"

"ETREMA"

Grounding in Lake Saint-Pierre, Quebec  
May 2, 1987.

---

Summary

The "ETREMA" is an 18,092 gross ton tanker, built in 1977 and registered in Douglas, Isle of Man.

On April 23, 1987, the "ETREMA" departed La Corunna, Spain bound for Montreal with a load of 24,609 tonnes of naphtha. The vessel arrived at the Pointe des Ormes pilot station at 0030 on May 2 where the exchange of pilots took place.

The master retired from the wheel-house leaving the pilot and the officer of the watch in charge of the vessel.

The vessel proceeded up-river. A series of minor alterations to starboard was executed before lining up on the Nicolet Traverse ranges. At about 0110, the pilot ordered a further alteration of course to 275° (G); the gyro error was nil. The rudder was put from amidships to 10° to starboard, the vessel started to turn to starboard, and the rate of swing increased.

On reaching the desired heading, the vessel continued to swing past the course. A steering gear hydraulic oil level alarm sounded. The pilot gave the helm order 'port 10°' followed by 'hard-a-port' and the engine order 'full astern'. The wheelsman turned the wheel 'hard-to-port' but after reaching 'midships', the rudder did not respond any further. Attempts were made to regain control of the steering gear by resetting the alarm on the bridge. However, these attempts were unsuccessful. The vessel struck Biron Reef a few seconds before going hard aground at 0112 in position 46°15.8'N, 072°39.9'W.

The incident was reported to the Montreal VTS Centre. A few minutes later, the steering gear was back in operation, the second engineer having restarted it in the steering gear compartment. An attempt at refloating the "ETREMA" was carried out using the wash of the first downbound vessel but it proved unsuccessful. Soundings were taken of the vessel's tanks and the water depth around the vessel and it was established that the forepeak and forward deep tank were making water but there was no sign of any pollution at that time; some leakage of oil which was observed later was minor and quickly dissipated through the action of the waves. At 0230, a second attempt at refloating was made following a transfer of cargo. However, the vessel remained aground.

During the day, while inspecting the steering gear, the isolation valve between the two pumps in the hydraulic fluid system was discovered to be faulty. An underwater inspection was also carried out.

At 0927 on May 3, the Canadian tanker "HUBERT GAUCHER" moored alongside the "ETREMA" and 4762 tonnes of naphtha were transferred. With the help of the tugs "CAPT. IOANNIS S", "ROBERT H" and "DUGA", at 1801, the "ETREMA" was refloated and she rejoined the "HUBERT GAUCHER" at the Pointe des Ormes anchorage where a further 2465 tonnes of naphtha were transhipped.

In the morning of May 4, divers carried out a second underwater inspection on the "ETREMA" and it was ascertained that the bottom shell plating and bilge strake on the starboard side forward were buckled as far aft as the forward bulkhead of No. 3 tank with fractures in way of the deep tank and No. 1 tank; the damaged tanks having been emptied of their cargo, the associated internals were found to be bent and distorted. In order to prevent a repetition of a similar nature it was agreed that the steering gear safety system would not be operated in the automatic mode during the voyage to Montreal. Permission for the vessel to continue her voyage was granted by a Canadian Coast Guard ship surveyor and at 1559 on May 4, the "ETREMA" departed the Points des Ormes anchorage bound for section No. 105 in the Port of Montreal.

Between May 9 and 14, temporary repairs were effected to the centre and starboard No. 1 tanks, to the deep tank and the bottom plating and a full inspection of the steering gear was carried out following the replacement of the defective isolation valve.

A Seaworthiness Certificate valid for one month was issued by the classification society and a Ship Surveyor from the Ship Safety Division granted permission for the vessel to proceed. At 1204 on May 15, 1987, the vessel departed Montreal bound for Curacao.

### Findings

The vessel "ETREMA" grounded on Biron Reef in Lake Saint-Pierre when a low-level alarm, followed by an isolating valve, both malfunctioned, rendering the steering gear inoperative.

It would appear that the following factors contributed to the casualty:

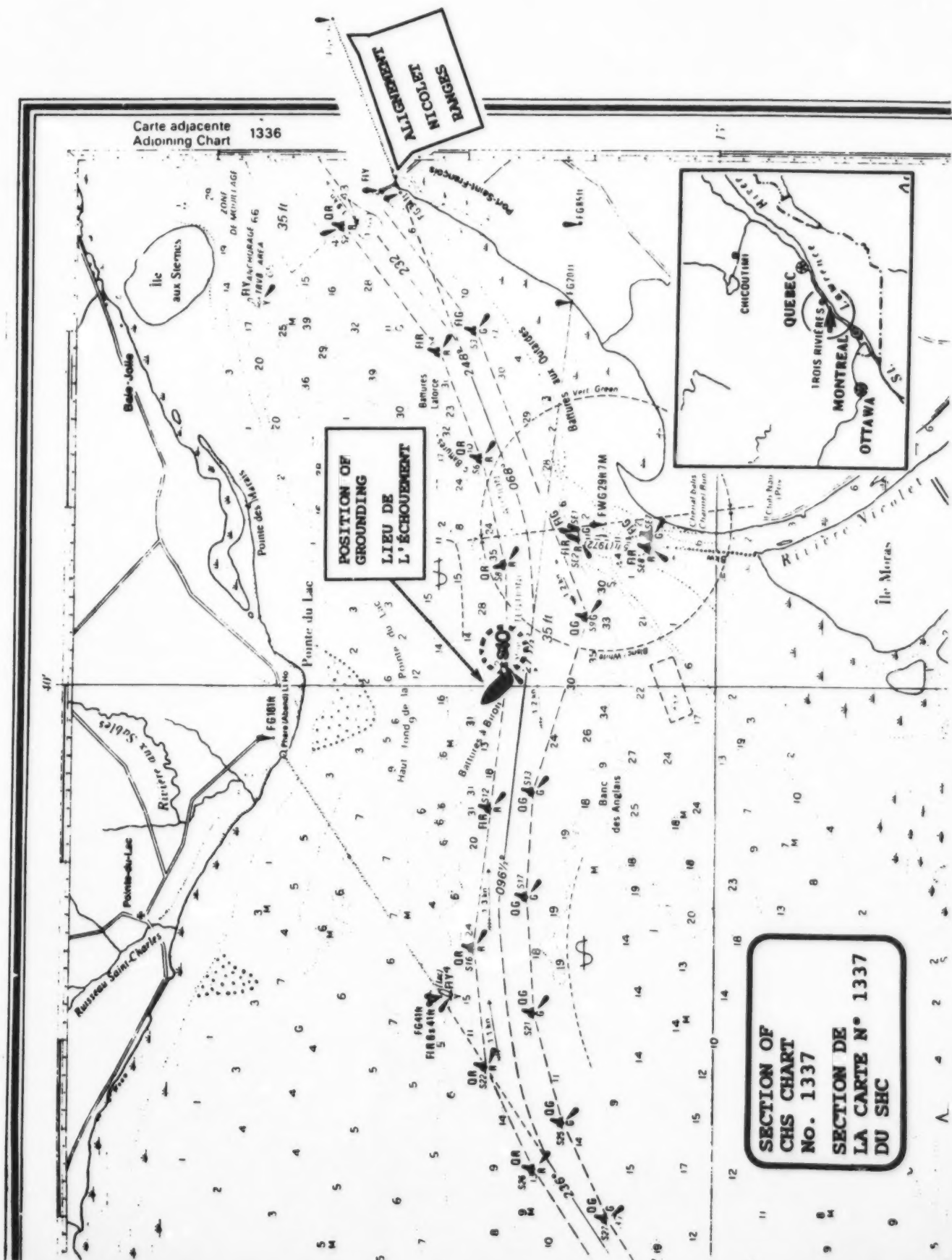
- vibration, or other factors, caused a low-level alarm on a steering gear hydraulic fluid header tank to falsely indicate a lack of fluid;
- the spurious signal from the low-level alarm activated the automatic monitoring mechanism of the hydraulic fluid system;
- the automatic monitoring mechanism automatically shut down one of the two steering gear units;
- following an electrical signal from the automatic monitoring mechanism, the isolating valve between the two steering gear units did not automatically close;
- since the steering gear unit which had been left in operation was not isolated, the hydraulic fluid followed the path of least resistance in the hydraulic system; and
- neither of the two hydraulic rams was supplied with hydraulic fluid at a sufficiently high pressure to actuate the rudder.

#### Other Findings

The working operation of the isolating valve may have been affected by debris or by infrequent usage.

The low-level alarm, L1A, was very sensitive and, as a result, could set off false alarms.

If the engineer of the watch had been present in the engine-room control room, it is possible that he may have been able to detect in time the malfunction of the low-level alarm in the hydraulic system before the steering gear was rendered inoperative.



**SECTION OF  
CHS CHART  
NO. 1337**

SECTION DE  
LA CARTE N° 1337  
DU SHC

"ETREMA"



BUOY  
S10  
/ BOUÉE

Aground on Biron reef.  
Échoué sur la batture à Biron.



Remote reset steering  
gear control panel  
in wheel-house.

Tableau de commande  
de réarmement à distance  
de l'appareil à gouverner  
dans la timonerie.

"LE FRENE NO.1"

Grounding in the Detroit River, July 21, 1987

---

Summary

The "LE FRENE NO.1" is a tanker of 5,102 gross tons registered in Sorel, Que, and engaged in the carriage of petroleum products on the Great Lakes.

On July 21, 1987, the vessel was in the Detroit River en route from Nanticoke, Ont. to Sault Ste Marie, Ont. with a cargo of 6,439 t of gasoline and furnace oil. The weather was fine with the wind westerly at about 10 knots and unlimited visibility as she left the East Outer Channel and passed Detroit River Light at 0410 to enter the Lower Livingstone Channel. The engine-room telegraph was on 'full ahead' and the "LE FRENE NO.1" was making about 11 knots over the ground as she made the 22° alteration to starboard, to the new course of 006°(T). When port rudder was applied to counteract the swing to starboard, the wheelsman reported that the wheel was stuck with 15° port rudder applied and he was unable to bring the wheel back to amidships. The master and the chief engineer were called and the vessel's speed was reduced. As the ship's head swing to port, the main engine was put to full speed astern and the starboard anchor was let go, but the fore part of the vessel grounded gently on the west side of the channel between buoys D27 and D29. The time was 0425.

Soundings were taken and a depth of 5.94 m was obtained at the stem; the vessel had been drawing 6.73 m forward and 6.37 m aft. Sarnia Vessel Traffic Services were informed by radio at 0445. There was no leakage of cargo and no pollution.

The cause of the steering gear failure was a hairline crack in a weld in the hydraulic oil pipe from the valve chest to the starboard ram. This crack allowed the hydraulic oil to leak and the loss of oil pressure prevented starboard helm action.

The crack in the pipe was brazed as a temporary repair and two tugs were summoned. The U.S. tugs "INDIANA" and "WYOMING" secured forward and aft at 1225, and the vessel was refloated at 1232, and towed to the Allied Chemical Co. berth at Amherstburg arriving there at 1400.

An internal examination revealed no apparent damage to the hull due to the grounding. A new length of pipe was fabricated, and during trials, further fractures occurred in other hydraulic piping. As the berth was required for another vessel, the "LE FRENE NO.1" was taken under tow to

Windsor for the repairs to be completed.

At the time of the casualty there were no other vessels in the immediate vicinity and there was no disruption of river traffic except that passing vessels were asked by Sarnia VTS to reduce speed while the "LE FRENE NO.1" was aground.

### Findings

When entering the Detroit River in the Lower Livingstone Channel, during the early morning of July 20, 1987 in good weather with good visibility, in darkness, the Canadian tanker "LE FRENE NO.1", due to a failure of her steering gear, grounded in soft mud on the west side of the channel between buoys 'D27' and 'D29'. No apparent damage to the hull of the vessel was discovered.

It would appear that the steering gear failed due to the following factors:

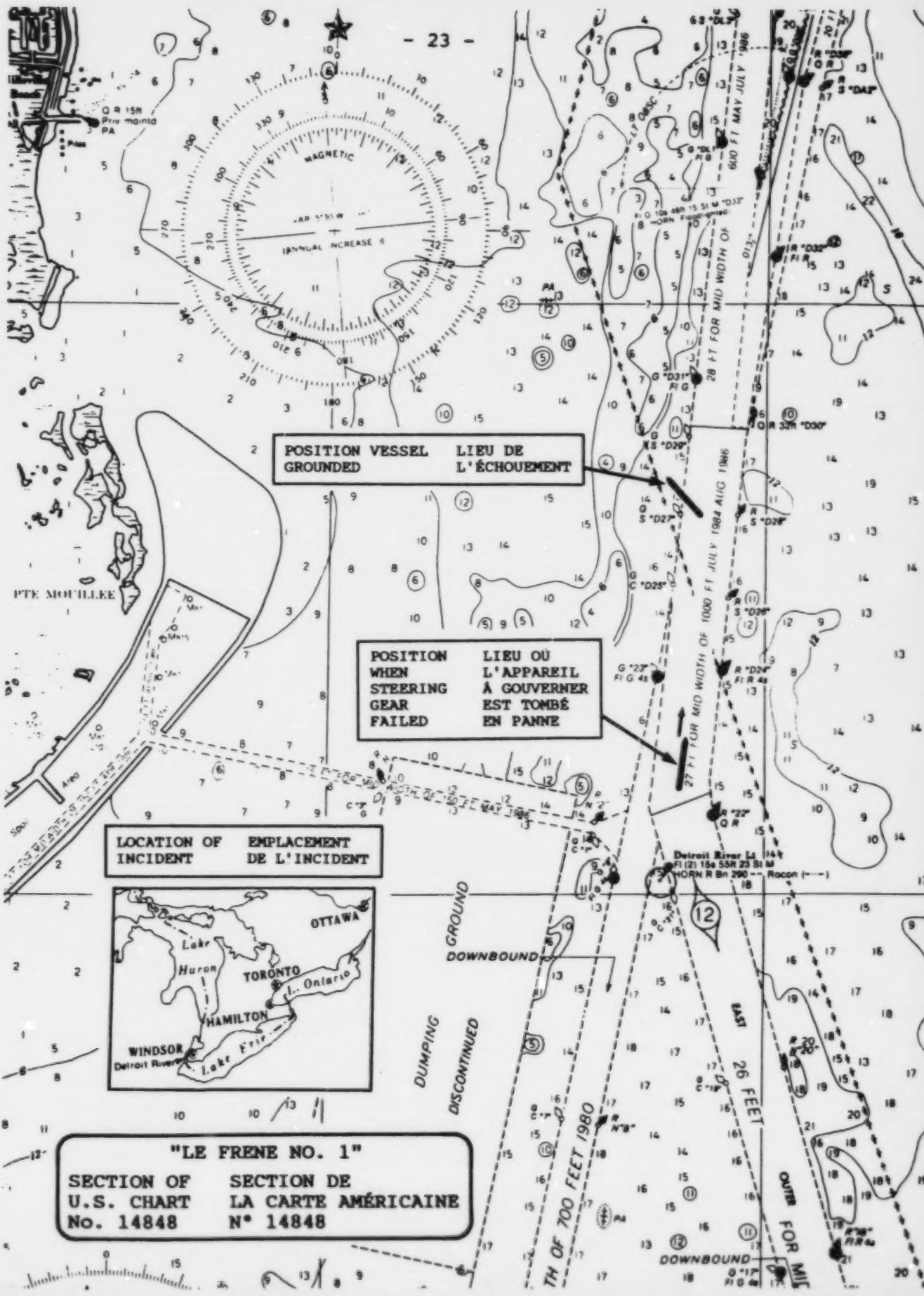
- loss of pressure and hydraulic fluid through a circumferential crack in the previous weld of the pipe from the valve chest to the starboard ram;
- the ingress of air in the hydraulic system, through the scored port ram and its disintegrated packing caused additional vibration and, thus, stress; and
- vibration, due to use in normal operation and the additional induced vibration from the air in the system contributed to the failure of the weld.

### Other Findings

Personnel aboard the "LE FRENE NO.1" reacted immediately to attempt to gain control of the vessel.

The prompt reduction of speed and use of the starboard anchor reduced the force of the impact and prevented damage.

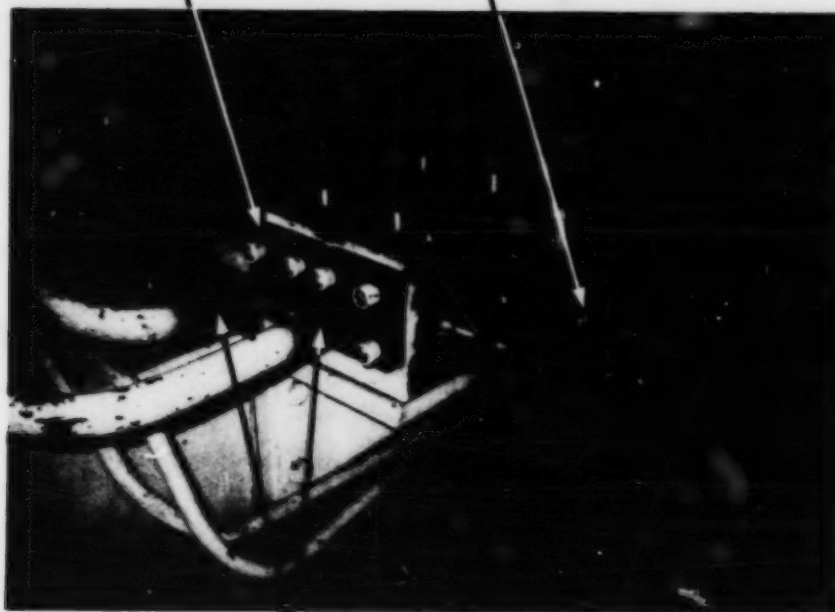
There were two other repair welds in other lengths of hydraulic pipe in the steering gear system.



"LE FRENE NO. 1"



|                           |                                     |                                                               |
|---------------------------|-------------------------------------|---------------------------------------------------------------|
|                           | Pipe which failed<br>July 22, 1987  | Tuyau qui a cédé,<br>le 22 juillet 1987                       |
| Valve chest<br>Collecteur | Brazing<br>on top of<br>repair weld | Soudage au bronze<br>au-dessus de la soudure<br>de réparation |



|                              |                                           |
|------------------------------|-------------------------------------------|
| Two previous<br>repair welds | Deux soudures<br>de réparation antérieure |
|------------------------------|-------------------------------------------|

**"FEDERAL SEAWAY"**

**Grounding in Lake St. Francis, Ont., April 12, 1987.**

---

**Summary**

The "FEDERAL SEAWAY" is a 15,005 gross ton vehicle carrier, built in Port Weller, Ont, and registered in Cleveland, Ohio. She is fitted with twin propellers, but a single rudder, and her bridge, accommodation and engine-room are located aft.

On the morning of April 12, 1987, the vessel was upbound in Lake St. Francis, in the St. Lawrence Seaway system, with a cargo of motor vehicles from Europe bound for Toledo, Ohio. The weather was fine and clear with a moderate breeze from the north-east and the current was reportedly setting 165° at about 1.5 knots.

At 0948, a relay in the controls for the port power unit of the steering gear was found to be overheating and steering control was switched to the starboard power unit. The relay was replaced and, with the "FEDERAL SEAWAY" in a convenient stretch of the channel, the steering was switched back to the port power unit which now appeared to be functioning normally.

At 1050, however, the steering failed with the rudder jammed hard-to-port. Once again the steering control was switched to the starboard power unit but on this occasion the rudder could not be moved and the main engines were put to 'full astern'. The diesel-powered emergency steering motor was switched on but the "FEDERAL SEAWAY" grounded on the south-east side of the channel in soft mud, close by buoy D55, at 1056. The ship's head was 219° and the vessel had a 5° starboard list; the Seaway Authorities were advised at 1101 and the starboard anchor was dropped at 1108.

The fault was found to lie where the overheating had occurred previously; the contacts of the replacement relay unit had fused together indicating a hard-to-port steering signal. The cause of the relay failures was then discovered to be a short-circuiting rectifier in the control unit on the bridge. There are four rectifiers, two for each power unit, one each for port and starboard rudder movement, and these rectifiers change the current from AC to DC, which is fed to their corresponding relays in the controls for the steering gear power units. Thus the fused contacts of the port-power-unit port-helm relay would not release the 'hard-a-port' signal and although an engineer had pulled the relay contactor out manually this had been done too late to prevent the grounding.

There were no functional spare rectifiers on board because of storm damage to replacement parts and one was made up from generator diodes. When this was fitted, it was tested and found to work satisfactorily. Ballast was pumped from Nos 1 and 4 double bottom tanks and the "FEDERAL SEAWAY" was refloated at 1740, with the tug "ROBINSON BAY" assisting because of the proximity of the stern to Buoy D55. Spare parts were received when the vessel reached Port Weller.

### Findings

The "FEDERAL SEAWAY" grounded above Buoy D55 in Lake St. Francis when the steering gear jammed in the hard-to-port position. It would appear that:

- the short-circuiting of a rectifier caused a corresponding relay in the port power unit controls to overheat. The steering control was changed to the starboard power unit before the steering gear failed;
- this short-circuiting rectifier subsequently caused the contacts of a replacement relay to fuse together indicating a hard-to-port signal;
- the starboard power unit could then not respond and move the rudder to starboard because the fused contacts would not release the hard-to-port signal;
- the vessel grounded before the emergency steering gear diesel motor could take effect; and
- the shorting rectifier was discovered after the vessel grounded.

### Other Findings

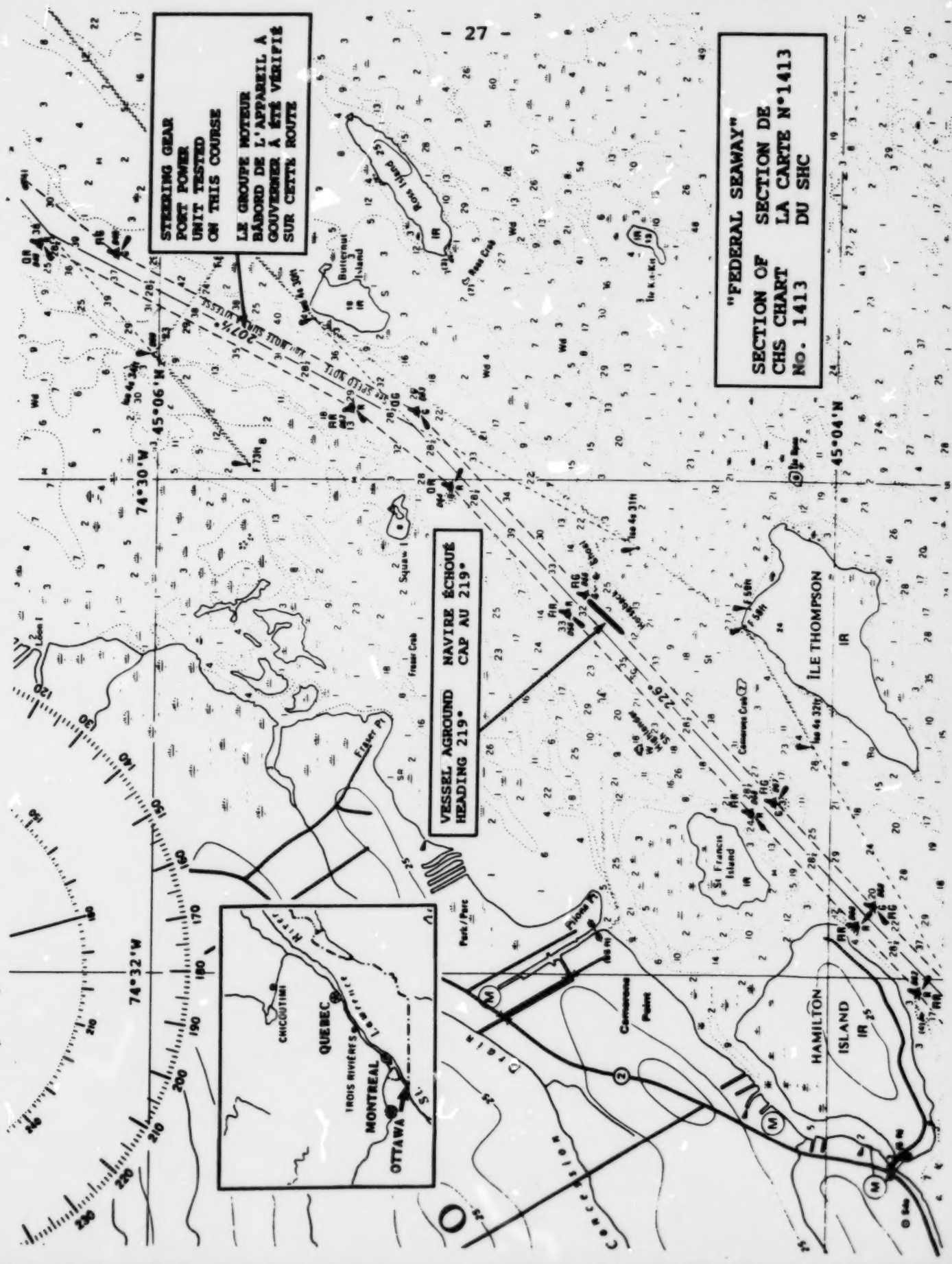
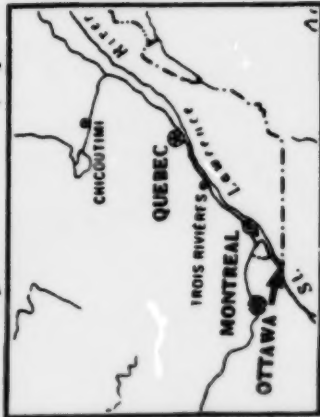
The ship's company reacted immediately and took such action as was possible in an attempt to keep the "FEDERAL SEAWAY" in the channel.

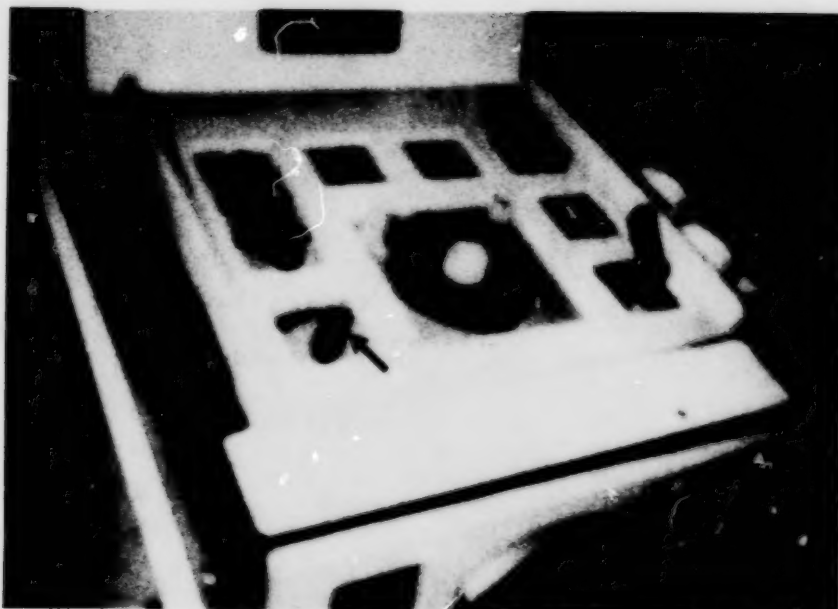
STERLING GEAR  
PORT POWER  
UNIT TESTED  
ON THIS COURSE

LE GROUPE MOTEUR  
BARORD DE L'APPAREIL A  
GOVERNÉ A ÉTÉ VÉRIFIÉ  
SUR CETTE ROUTE

"FEDERAL SEAWAY"  
SECTION OF  
CHS CHART  
No. 1413  
DU SHC

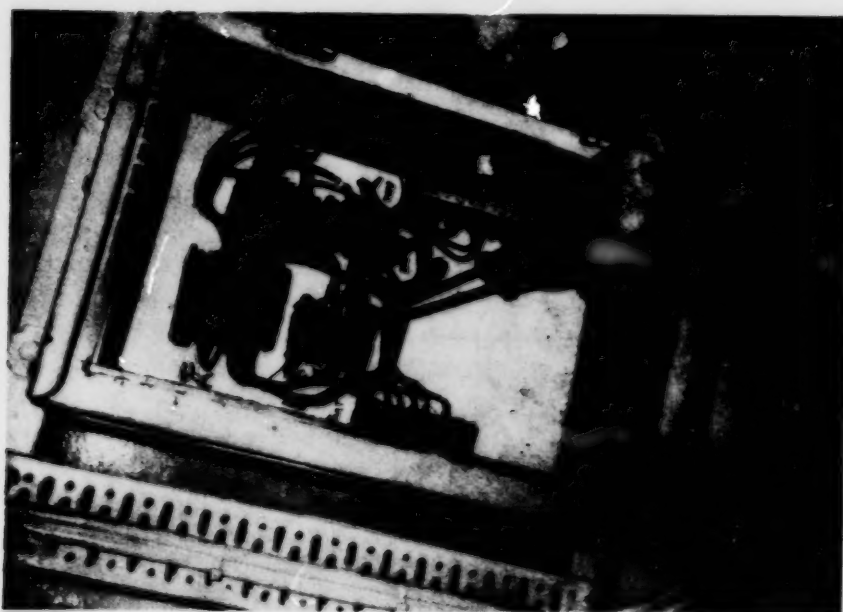
VESSEL AGROUND  
NAVIRE ÉCHOUÉ  
CAP AU 219°





Primary steering console-switch set to starboard power unit.

Console principale du poste de bord - sélecteur réglé au groupe moteur tribord.



The four relays - screwdriver indicates contacts which fused together.

Les quatre relais - tournevis indique les contacts qui ont soudé ensemble.

**"COMEAUDOC"**

**Grounding in lac Saint-François, June 1, 1987.**

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**Summary**

The "COMEAUDOC", of 17,360 gross tons, is a typical Great Lakes vessel with an overall length of 222.44 metres. She was built in Collingwood in 1960 and is registered in Thunder Bay, Ontario. Her navigating bridge is located forward and her machinery space aft.

On May 28, 1987, she sailed from Thunder Bay bound for Quebec City with a cargo of 23,878 t of wheat. At 1820, on June 1, drawing 7.7 m forward and 7.8 m aft, the "COMEAUDOC" departed Snell Lock downbound and the chief officer took over the conduct of the vessel; the OOW and a helmsman were also on the bridge.

It was dusk, with the visibility 2 to 3 miles in hazy conditions as the vessel, making an estimated 12.96 knots over the ground, began the alteration to port at buoys D21/D22. The vessel was steadied on a red flashing buoy believed to be D18, but in effect D14. The light characteristics of the buoys were not taken into consideration in lining up the vessel nor was any regard paid to the Île Chrétien Ranges astern, reportedly because of previous difficulties with these lights being obscured. A radar display was not directly visible to the chief officer from his seated conning position and neither officer used the radar to monitor the vessel's position.

Pointe Beaudette light was noted to be abeam at 2042, but the distance off was not determined, and at 2044 the "COMEAUDOC" grounded to the east of the channel. Soundings were taken and no ingress of water was found. The Seaway were advised of the situation and, after an unsuccessful attempt was made to free the vessel, tugs and lightering barges were called to assist. An underwater survey the following day revealed no apparent damage to the vessel.

After lightering about 6,297 t of cargo, to be reloaded later in the Port of Montreal, the "COMEAUDOC" was refloated, assisted by 5 tugs, at 0520 on June 7, 1987. An inspection was carried out at Saint-Zotique anchorage and the vessel resumed her voyage to Quebec City via Montreal.

The inquiry initiated a check on the obscuring of the Île Chrétien Range lights and the results are shown on the accompanying chartlet, together with groundings in the area reported to Transport Canada since 1975. The Canadian Coast Guard initiated measures to clear the obstructions to the

lights, which had not been previously reported as obstructed.

There were no injuries nor was there any pollution as a result of the grounding but the cost of refloating, of lightering and reloading cargo and of delays to the vessel was estimated to be in the region of \$600,000.

### Findings

The downbound vessel "COMEAUDOC" ran aground near buoy D17 on lac Saint-François, Québec, at about 2044 on June 1, 1987 due to an error in navigation by those having the conduct of the vessel.

It would appear that the following factors contributed to the grounding:

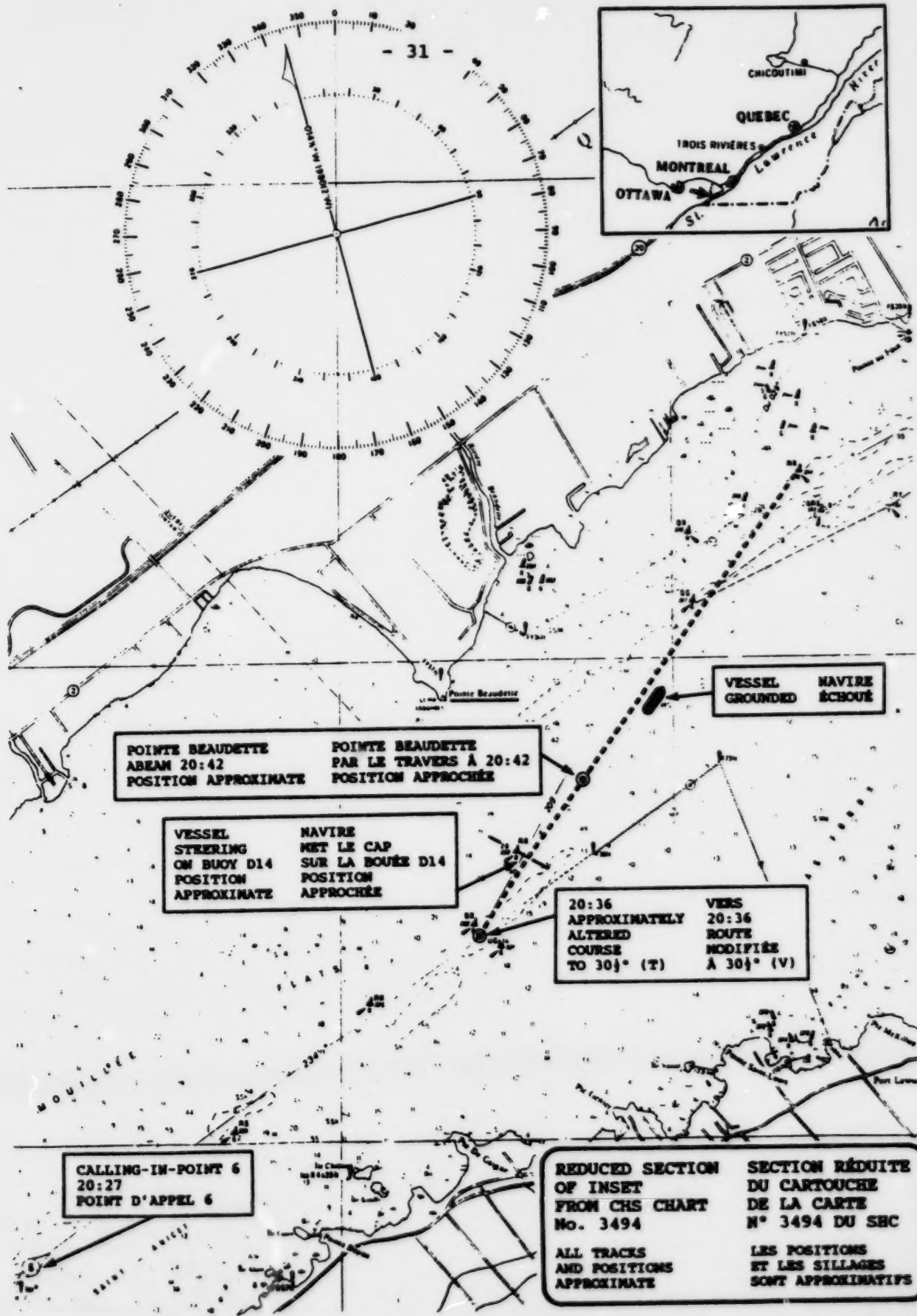
- buoy D14 was mistaken for buoy D18, notwithstanding the fact that the light characteristics of these buoys are different;
- the position of the vessel was not checked at frequent intervals to ensure that the planned course was followed, as required by Part I, section 6 (b) of the Recommended Code of Nautical Procedures and Practices;
- the most effective use of all the vessel's navigational equipment was not made, as required by Part I, section 7 of the Recommended Code of Nautical Procedures and Practices;
- all relevant navigation marks were neither effectively used nor identified, as required by Part II, sections 20 and 21, of the Recommended Code of Nautical Procedures and Practices; and
- Ile Chrétien Ranges were obscured by trees over certain critical sectors and were thus unreliable.

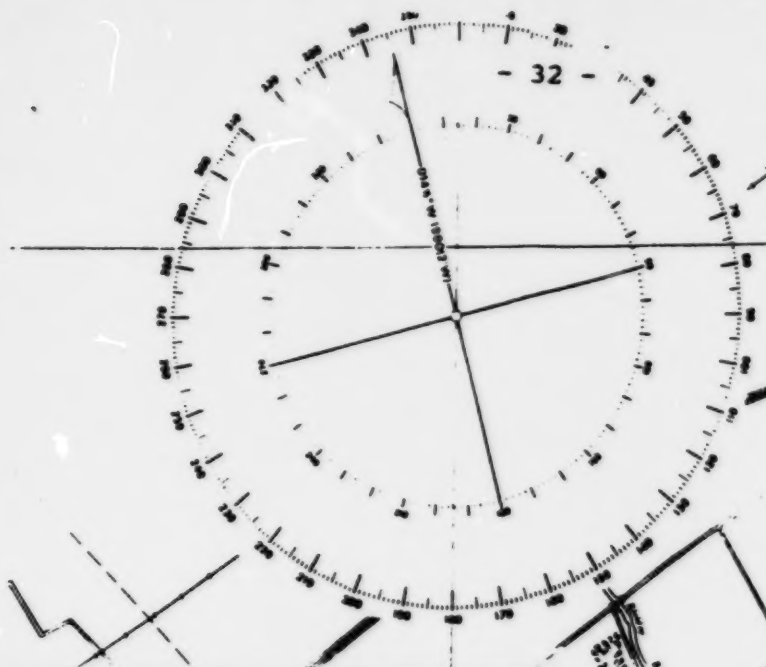
### Other Findings

In the absence of instructions, either written or verbal, the OOW gave minimal assistance to the officer having the conduct of the vessel.

Pointe au Foin Steering Light, Light List No. 94.2 must be used in conjunction with other aids in order to be an effective course heading reference.

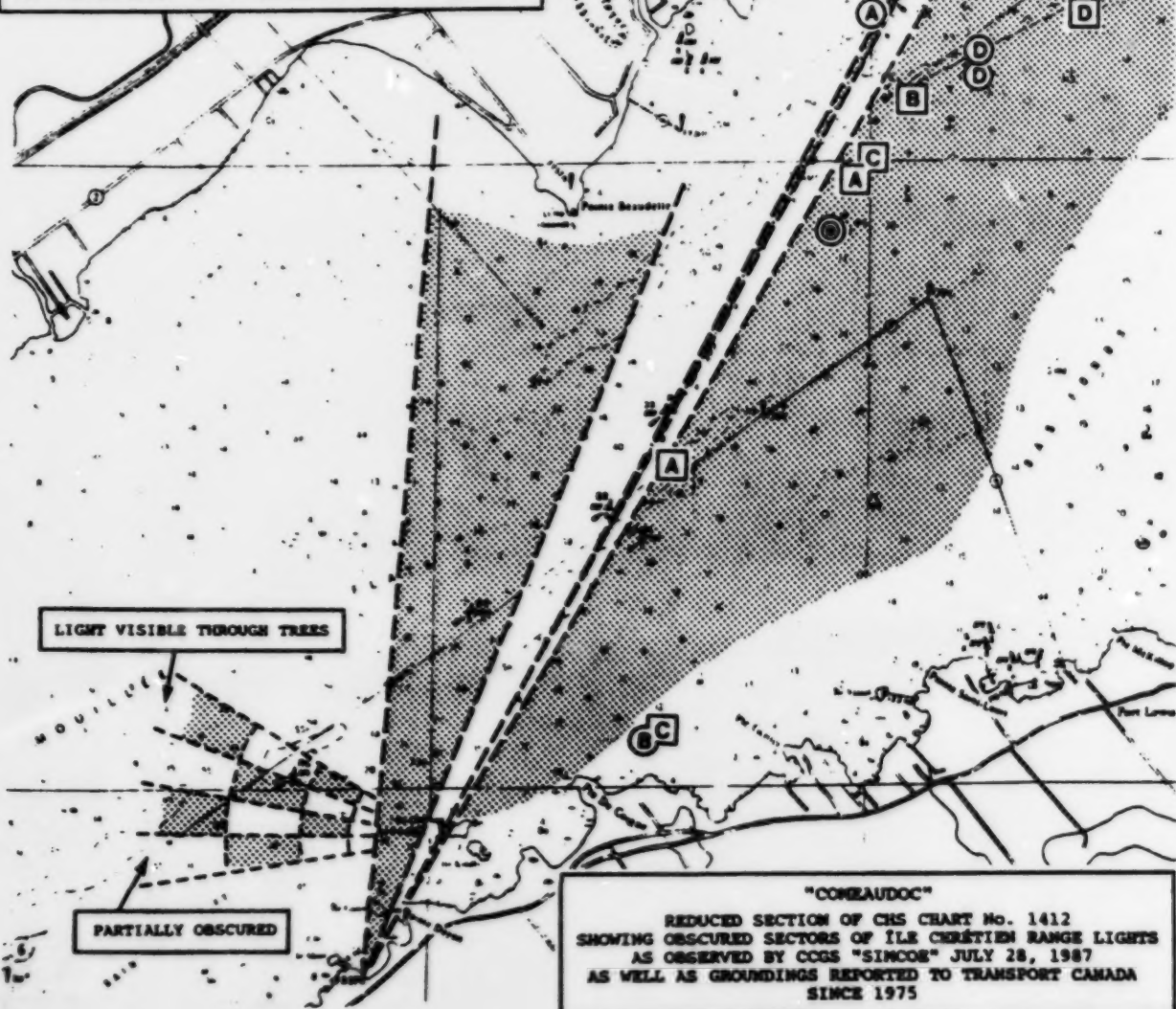
The casualty occurred at dusk when some of the navigational marks in the area were difficult to identify.





| LEGEND |                                        |
|--------|----------------------------------------|
|        | DOWNBOUND VESSEL<br>(TOWARDS MONTREAL) |
|        | UPBOUND VESSEL<br>(FROM MONTREAL)      |
| A      | MISIDENTIFIED NAVIGATION MARKS         |
| B      | ERROR IN NAVIGATION - GENERAL          |
| C      | MECHANICAL BREAKDOWN                   |
| D      | REDUCED VISIBILITY                     |
|        | OBSURED SECTORS                        |

THESE DATA ARE PRESENTED ON ONE CHARTLET FOR CONVENIENCE. NO INTERRELATIONSHIP IS INFERRED.



LIGHT VISIBLE THROUGH TREES

PARTIALLY OBSURED

"CONELAUDOC"  
REDUCED SECTION OF CHS CHART No. 1412  
SHOWING OBSURED SECTORS OF ÎLE CHRÉTIEN RANGE LIGHTS  
AS OBSERVED BY CCGS "SINCOB" JULY 28, 1987  
AS WELL AS GROUNDINGS REPORTED TO TRANSPORT CANADA  
SINCE 1975



Photographs taken at dusk on June 2, 1987 - vessel aground.  
Note position of buoy D17 - vessel on grounding heading.  
(Starboard hand buoy when downbound)

Photographies prises au crépuscule le 2 juin 1987 - navire échoué.

À remarquer : l'emplacement de la bouée D17 - le cap du navire à l'échouement. (La bouée sur tribord en descendant)



Pilotage position. Poste de commande.

## "SASKATCHEWAN PIONEER"

Grounding on Georges Island, Halifax Harbour, N.S.,  
April 20, 1987.

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### Summary

The "SASKATCHEWAN PIONEER" is a seven-hold, seven-hatch bulk carrier of 21,548 gross tons registered in Thunder Bay, Ont. She is fitted with a single, four-blade, controllable-pitch propeller, a Kort Nozzle rudder and a bow thruster, making her, under normal circumstances, a highly manoeuvrable vessel such that she can frequently dispense with the services of tugs. She trades regularly in the Great Lakes and to the Maritimes and overseas.

On April 20, 1987, the "SASKATCHEWAN PIONEER" arrived at Halifax, Nova Scotia, to discharge a cargo of some 25,000 t of wheat from Thunder Bay. The pilot boarded at 0105 which was coincidentally the time of high water in the harbour. There was a light breeze from the north and dense fog as the vessel proceeded inwards to her berth at Pier A and both radar sets were in operation as was the Loran C with a continuous read-out of the vessel's speed. The master and the pilot were monitoring the radars and the OOW was plotting the vessel's progress on the chart. The vessel was also being monitored ashore on the VTS Radar Surveillance System but technical problems meant that this tracking was intermittent.

Speed was reduced as the "SASKATCHEWAN PIONEER" neared the area south of Georges Island where she would alter some 90° to port onto the final approach to the berth and the bow thruster was readied for operation; no tugs were being engaged for the berthing manoeuvre. With the helm 'hard to port' the vessel failed to come to port as expected and the main engine was put to 'stop', then 'astern' with the helm to starboard. There was a delay in activating the bow thruster but it was then put to 'full port' thrust and the engine to 'full astern'. As the vessel swung, her fore part grounded on a shoal patch to the south of Georges Island. The time was 0203.

The vessel was drawing 9.27 m forward and 9.58 m aft and carrying some 10,000 t of water ballast in addition to her grain cargo. At 0328, the "SASKATCHEWAN PIONEER" was refloated after pumping out ballast and proceeded to the berth under her own power. Once berthed and with all ballast pumped out, the forepeak and No.1 double bottom tanks were inspected by the crew and a surveyor from the Ship Safety Branch of the Coast Guard and no apparent damage was found. There were no injuries or pollution as a result of the grounding.

### Findings

While inbound to the Halifax grain elevators on April 20, 1987, under the pilot's advice and in dense fog, the "SASKATCHEWAN PIONEER" grounded, with no apparent damage, south of Georges Island, as a result of an error in judgement in the navigation of the vessel. It would appear that the following factors contributed to the grounding:

- the visibility was extremely poor due to fog;
- the alteration of course to port was started too late and from a position not plotted on the chart;
- there was no blind pilotage plotting regime in place;
- the vessel was slow to respond to the port helm order as she was proceeding at dead slow speed because of fog and proximity to danger; and
- there was a delay encountered in starting the bow thruster.

### Other Findings

The vessel line-up to the berth in question requires a close approach to Georges Island.

The automatic tracking facility of the VTS radar did not operate as specified.

The Vessel Traffic regulator did not maintain a close radar scrutiny on the "SASKATCHEWAN PIONEER".

The vessel did not report the casualty at the time of the occurrence as required by the Shipping Casualties Reporting Regulations.

GEORGES ISLAND  
RADAR SURVEILLANCE  
ALARM ZONE

ZONE D'ALARME  
DE SURVEILLANCE RADAR  
DE L'ÎLE GEORGES

VTS  
RADAR  
TOWER

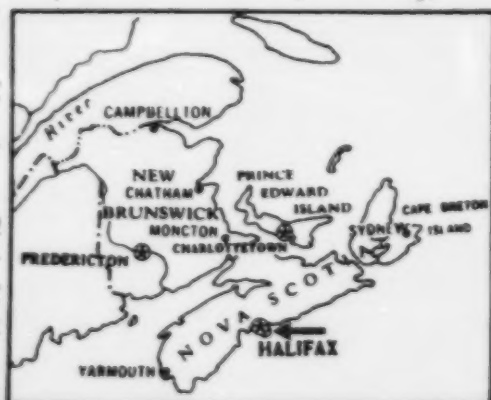
TOUR  
DE RADAR  
DES STM

POSITION  
OF GROUNDING

LIEU DE  
L'ÉCHOUEMENT

APPARENT  
TRACK OF  
VESSEL

SILLAGE  
APPARENT  
DU NAVIRE

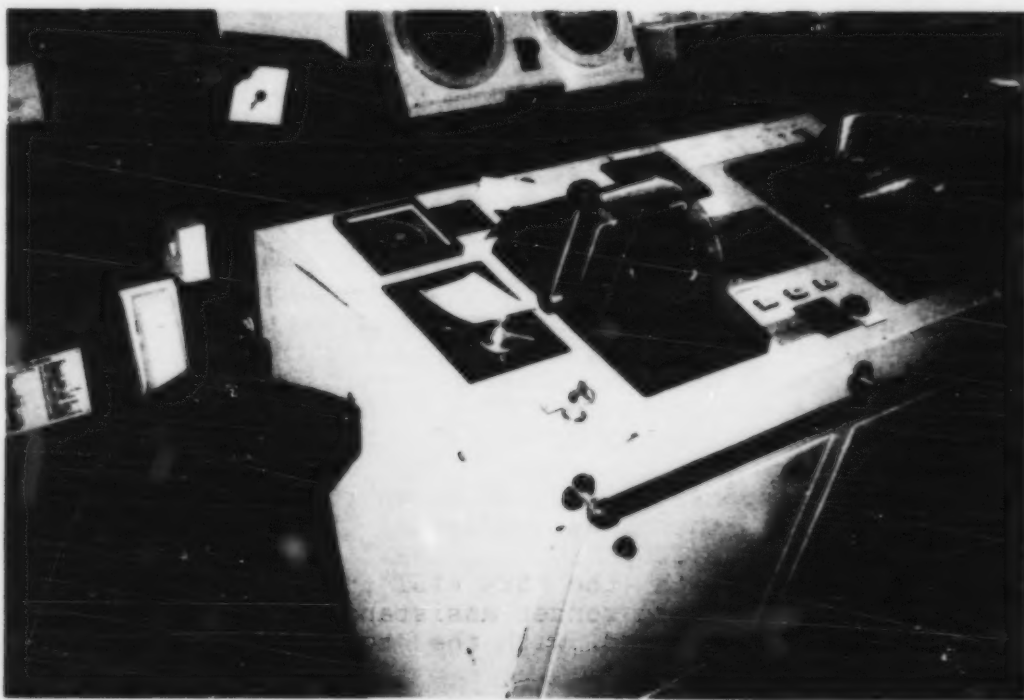


REDUCED SECTION  
OF CHS CHART  
No. 4316

SECTION RÉDUITE  
DE LA CARTE  
N° 4316 DU SHC



Inside wheel-house.  
L'intérieur de la timonerie.



Main engine and bow thruster controls.  
Commandes de la machine principale et du  
propulseur d'étrave.

### "SEA KIST"

Grounding on Kennedy Island, Arthur Passage, B.C.,  
February 28, 1987.

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#### Summary

The "SEA KIST" is an uninspected, U.S. registered steel tug of 146 gross tons built in New York in 1943. On February 27, 1987, she departed Ketchikan, Alaska for Seattle, Washington, with the unmanned fish packer "EVENING BREEZE" in tow. The intention was for the tow to proceed through the Inner Passage, in Canadian waters.

The tug was manned by a 3 person crew comprising the master, mate and an engineer. As the vessel was not equipped with an automatic pilot, the person in charge of the navigation watch was responsible for the steering, the look-out, the radar watch, navigating the vessel and monitoring the tow. The deck watch alternated between the master and the mate and because the magnetic compass was reportedly unreliable, the radar was the only shipboard navigational aid being used. The tow was being navigated using a marine atlas as a chart. After entering Canadian waters, and as the tow proceeded through the Inner Passage, the weather was overcast and clear but with snowflurries reducing the visibility at times; the wind was from the south-east at 15 to 20 knots.

Shortly after 0400, February 28, with the tow proceeding at an estimated eight knots and navigating through Arthur Passage, snowflurries reduced the visibility to less than two cables. The radar display was reportedly mainly obscured at this time by heavy clutter. As the flurries passed, a flashing light was seen on the port beam and this was assumed to be the next light indicated on the marine atlas, Watson Rock light, off which the course was to be altered to enter Grenville Channel. The course was altered accordingly and the master called to the wheel-house. As the situation was being assessed, the tug grounded on the western side of Kennedy Island, having just passed the light located on the island, some one-half mile to the north; this light was not indicated on the atlas. The casualty was reported to Prince Rupert Traffic Services at 0415.

In response to the tug's report of grounding and further advice that there was no danger to the crew, RCC Victoria, dispatched the CCGC "POINT HENRY" to the scene and after consultation with the "SEA KIST", arrangements were made for commercial tugs to render assistance to the two vessels. The tide was ebbing and with the tug's pump in operation, the

inflow of water was controlled and with the additional pumps from assisting vessels, the "SEA KIST" was able to refloat on the rising tide. The "EVENING BREEZE", held by her bridle caught on the rocks, was released by a commercial tug and taken to Prince Rupert. The "SEA KIST" was later towed to a boatyard at Prince Rupert for repairs.

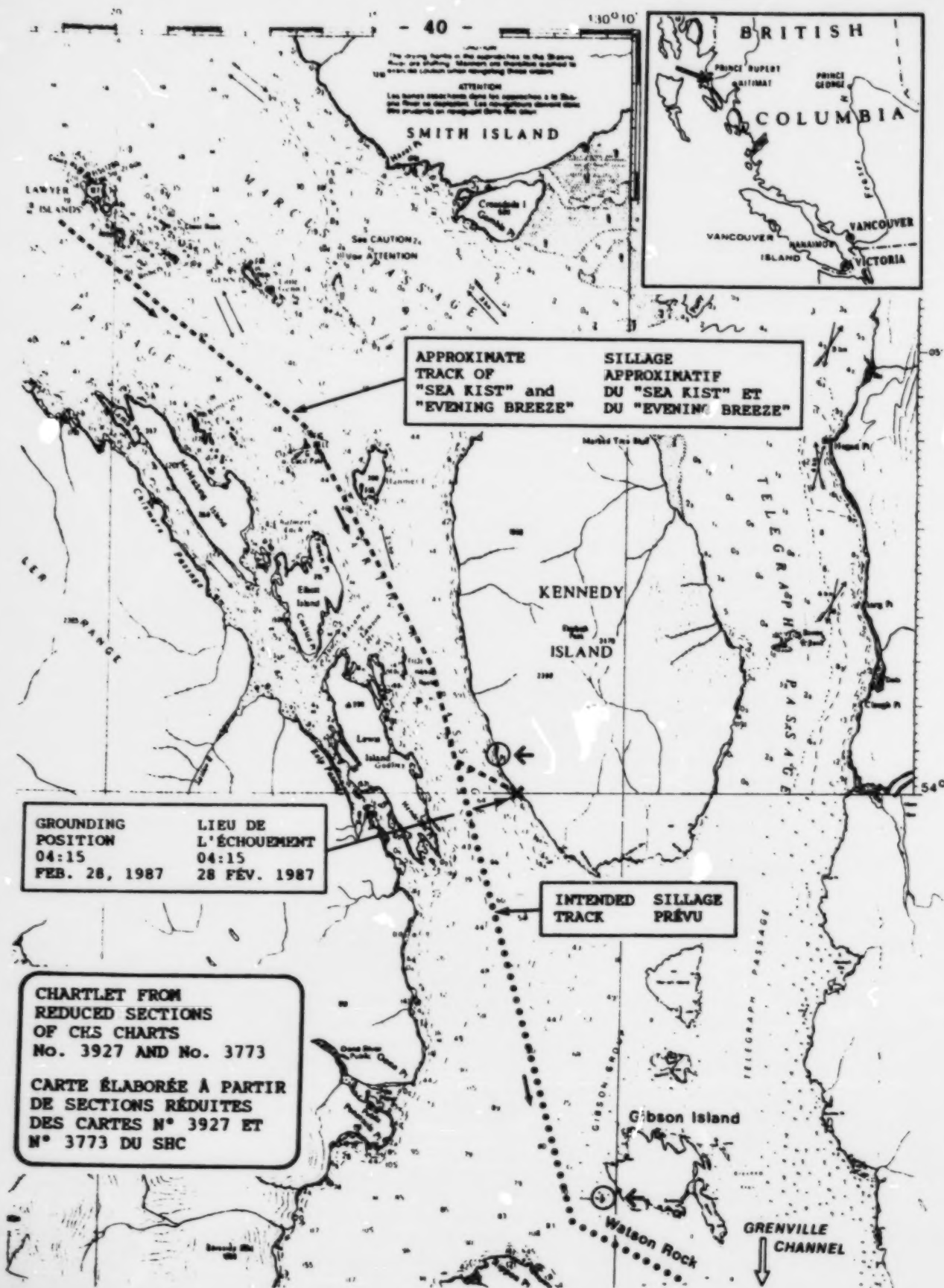
There was no pollution and no injuries were reported as a result of the grounding.

#### Findings

The American tug "SEA KIST", southbound and towing an American fish packer "EVENING BREEZE", ran aground on the western shores of Kennedy Island, B.C. in the early hours of February 28, 1987 due to an error in navigation. The tug sustained some damage to her hull and was subsequently refloated and towed to Prince Rupert for repairs.

It would appear that the following factors contributed to the vessel's grounding:

- the bridge was manned by a single person who was not licenced as required by the (U.S.) Code of Federal Regulations and the Ship's Deck Watch Regulations;
- the vessel's course was altered without first establishing the vessel's position and without positively identifying the navigation aids as required by the Recommended Code of Nautical Procedures and Practices;
- lack of proper charts and publications as required by the Charts and Publications Regulations resulting in inaccurate identification of the night navigation aids;
- the vessel did not maintain a proper look-out as required by Rule 5 of the International Regulations for Preventing Collisions at Sea, 1972;
- the magnetic compass on board was not properly maintained and had a large deviation error, and there was no deviation card on board, both contrary to the requirements contained in the Navigating Appliances and Equipment Regulations; and
- the deck watch was inadequately manned contrary to the requirements of the Ship's Deck Watch Regulations, with the OOW steering, his attention was diverted from safe navigation of the vessel.





F.V. "EVENING BREEZE", the vessel in tow.

N.P. "EVENING BREEZE", le navire se faisant remorqué.

**"J.A.Z. DESGAGNES"**

**Grounding at Grande-Rivière-de-la-Baleine, Hudson Bay,  
on August 3, 1986.**

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**Summary**

The "J.A.Z. DESGAGNES" is a twin screw, single hold, general cargo vessel of 798 gross tons and is registered in Québec.

The vessel departed Chisisabi, Que. on August 2, 1986 with 575 t of general cargo aboard. The cargo was for discharge at Poste-de-la-Baleine and other ports in Hudson Bay. She arrived at anchor off Grande-Rivière-de-la-Baleine at 1355 the following day.

After being partially deballasted, the vessel was trimmed to an even keel draft of 2.72 m. The anchor was weighed at 1635 and the vessel commenced the inward crossing of the sand bar at the entrance to the river. There was to be a minimum charted depth of water over the bar of 2.1 m at the predicted time of high water, 1849. There was reportedly a swell of about 0.3 m (1 foot) that day and visibility was 3/4 to 1 mile.

At 1700 the vessel was felt to strike heavily on what was believed to be a submerged object on the bottom, after which she came to a stop, aground. In general, the bottom in the area is reported to be sand. Damage was later determined to have been caused to her bottom plating in the fore peak, which was found to be making water. The damage was consistent with that which would be caused by a boulder.

The vessel was put astern, refloated and crossed over the bar on a different approach track also touching bottom but, otherwise, without further difficulty. She was then anchored in Grande-Rivière-de-la-Baleine where temporary repairs were effected by ship's personnel.

The casualty was reported to Marine Casualty Investigations by mail on September 4, 1986, and subsequent inquiries made by the Ship Safety Branch of the Canadian Coast Guard to the vessel's owners determined the nature of the damage sustained. Following this the vessel was given permission to proceed on her voyage. In the interval between the casualty and receiving permission to proceed on her voyage, the vessel had continued on her Arctic Supply Voyage, and had called at several ports.

It was later determined that the vessel had frequently crossed over the bar at Grande-Rivière-de-la-Baleine at a

draught greater than the minimum depth of water available at high water. No damage was known to have been caused on these occasions.

At the close of the 1986 navigation season the vessel was laid-up for the winter on October 30, at Chisisabi, Que. with permanent repairs scheduled to be carried out before the 1987 season. No estimate of the cost of repairs was available.

The grounding caused neither human injury nor pollution.

#### Findings

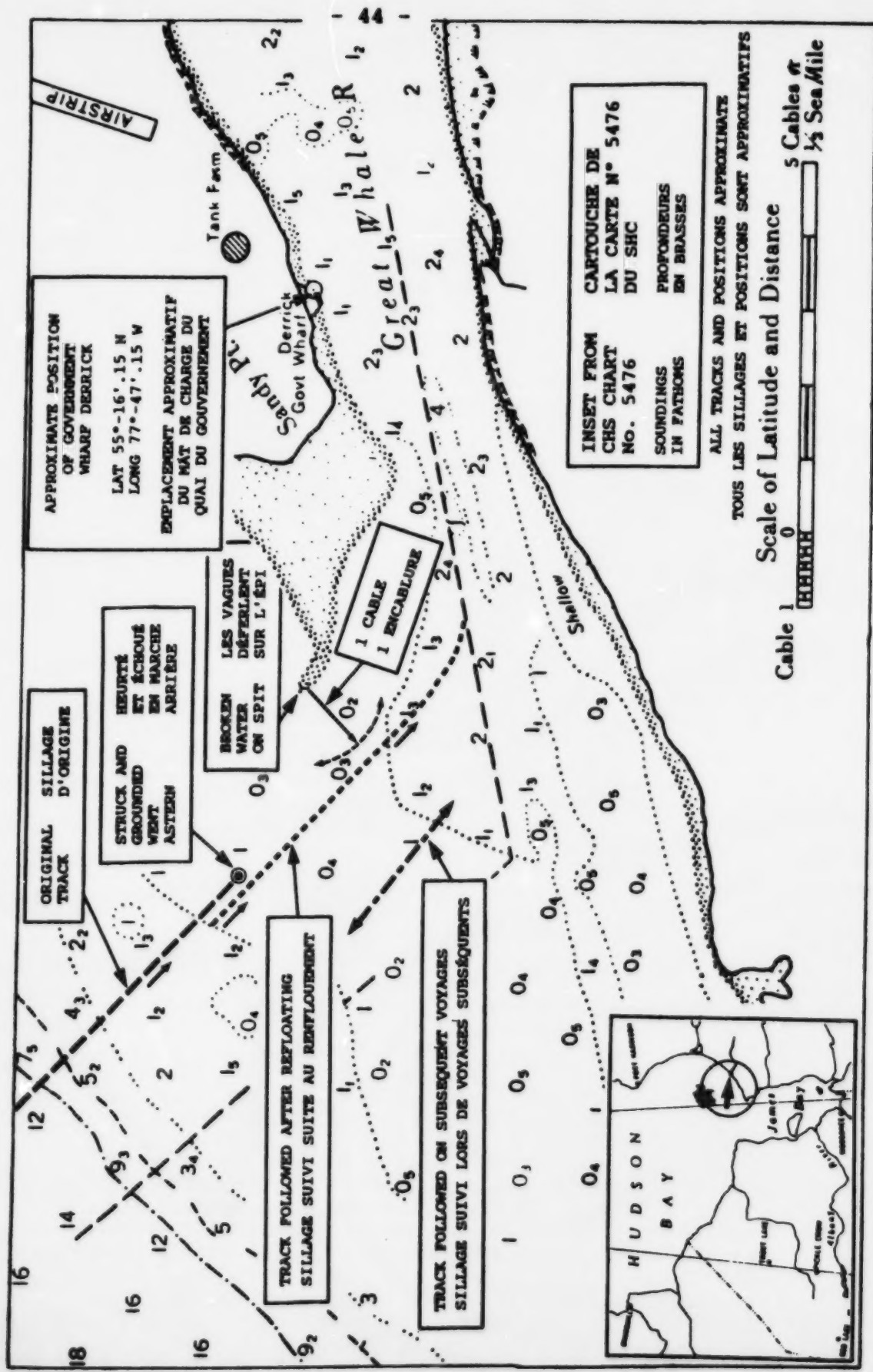
The "J.A.Z. DESGAGNES" ran aground on the sand bar at the entrance to Grande-Rivière-de-la-Baleine, in daylight and in reduced visibility, at about 1700 on August 3, 1986, causing damage to the bottom plating of the fore peak. It would appear that:

- the cause of the casualty was that the approach to the river was made in the knowledge that the vessel's draught exceeded the least charted depth of water available over the bar by 0.92 m, and by 0.62 on the course steered;
- this calculated risk was taken because the vessel had previously successfully passed over the bar at similar draughts and tide states;
- such calculated risks are an accepted part of navigating vessels in remote areas; and
- the damage to the bottom plating was caused by an uncharted obstruction on the sand bar during her planned approach.

#### Other Findings

At the time of the casualty there was no officer on watch to assist the master in the navigation of the vessel, contrary to subsection 7(5) of the Ships' Deck Watch Regulations and to the Code of Nautical Procedures and Practices.

Neither the vessel's master nor her operator reported the casualty immediately as required by section 438 of the Canada Shipping Act, nor as required by subsections (4) and (5) of the Shipping Casualties Reporting Regulations.



**"MARGRO II"**

**Flooding and beaching, near Owen Sound, Ont., June 2, 1987.**

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**Summary**

On June 2 1987, the Canadian tug "DEBBIE-CIN", an 11 gross ton registered fishing vessel, was towing the 101 gross ton steel barge "MARGRO II" with a deck cargo of 225 tons of logs from Hay Island to Owen Sound. The weather was hazy with light airs.

At 1930, the "MARGRO II" was beached on Squaw Point Shoal after the forward end of the barge was seen to be low in the water. Following a message to Wiarton CGRS the barge "REMY EXPLORER" arrived on the scene and commenced removing logs with her crane. The "DEBBIE-CIN" brought two gasoline-powered pumps from Owen Sound and these were started below decks on the "MARGRO II". The operator of the "DEBBIE-CIN" had to be assisted on to the deck when he became dizzy from carbon monoxide fumes while tending the discharge hoses. A further message to Owen Sound via the CGRS resulted in an ambulance meeting the pleasure craft "GI-GI" which transported the operator to Owen Sound where he was treated at the hospital and released. The Fire Department boarded the "MARGRO II" and, wearing breathing apparatus, refuelled and restarted the pumps. The "MARGRO II" was refloated at 1100, June 3, and was towed to Owen Sound. About 15 tons of logs were lost overboard.

**Findings**

The log barge "MARGRO II", while under tow by the "DEBBIE-CIN" from Hay Island to Owen Sound had the forward section flooded, and was beached on Squaw Point Shoal. While pumping out the flooded spaces with gasoline driven water pumps, the operator of "DEBBIE-CIN" was overcome by carbon monoxide fumes and had to be assisted on to the deck.

It would appear that the casualty was caused by:

- the deck support in way of the port jack-post mounting, the latter being part of the bow ramp raising arrangement, failed due to insufficient strength;
- cracking of the deck resulted from this insufficient strength;
- the crack permitted an ingress of water with the barge in a low freeboard condition, increasing the ingress as the tank flooded;

- contrary to the owner's instructions, the barge's auxiliary diesel engine used for driving an electrical generator and power automatic bilge pumps was not in operation, and the bilge pumps failed to operate in the absence of electrical power.

It would further appear that the accident to the operator was caused by:

- portable gasoline pumps being placed in the tanks to pump out the flooded spaces;
- the limited tank ventilation;
- the pumps producing carbon monoxide exhaust gas; and
- since the pumps required tending, the operator entered the enclosed space without any form of breathing apparatus and was partially overcome by carbon monoxide exposure.

#### Other Findings

The "DEBBIE-CIN" did not comply with the Small Vessel Regulations which require a vessel converted for towing to carry an inflatable liferaft when there are two or more crew members.

The "DEBBIE-CIN" did not comply with the "Hull Construction Regulations" which require that the stability characteristics of a vessel converted for towing be approved by the Board of Steamship Inspection.

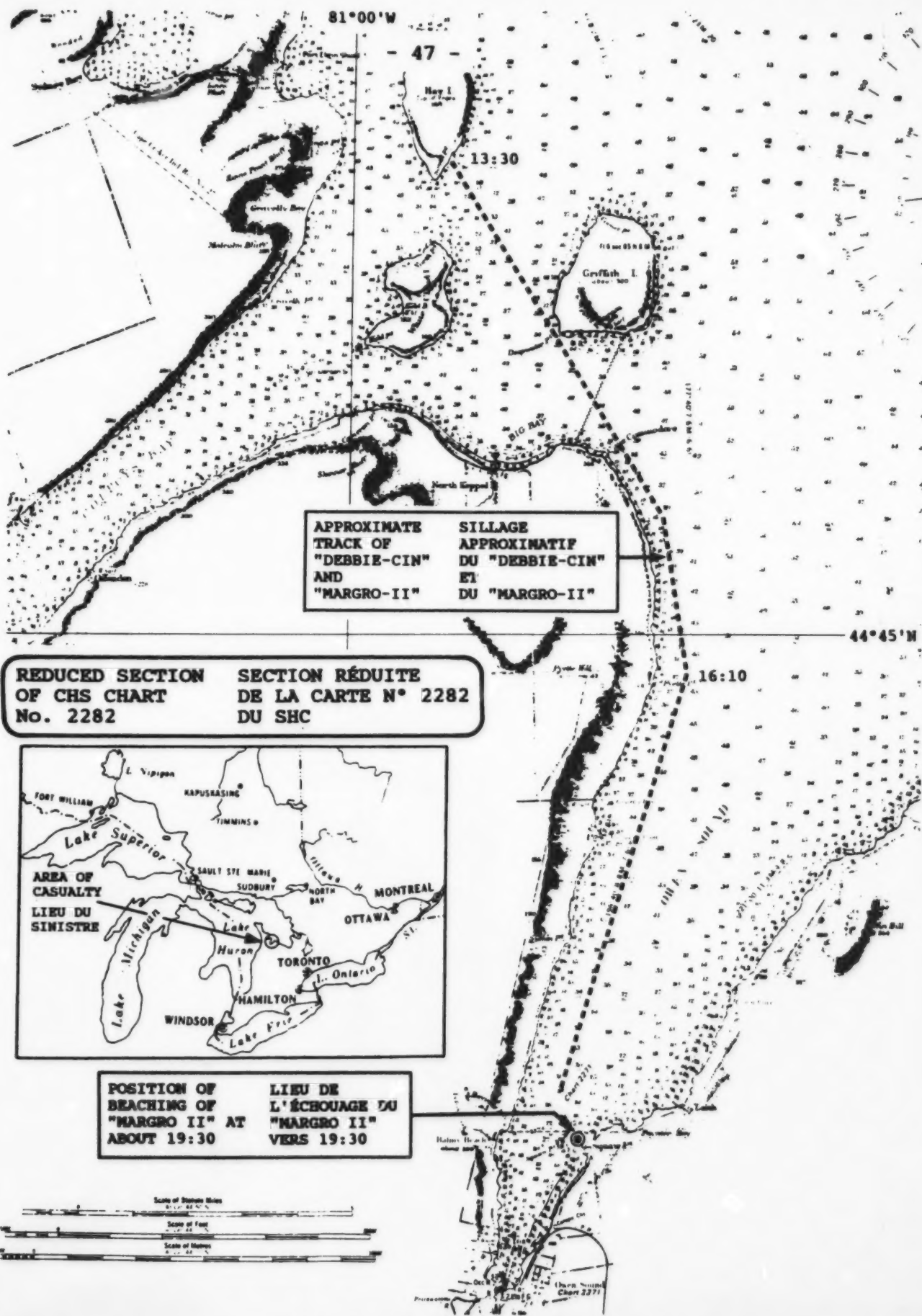
The operator of "DEBBIE-CIN" was not duly certificated as required by the Canada Shipping Act for a commercial vessel over 10 tons gross.

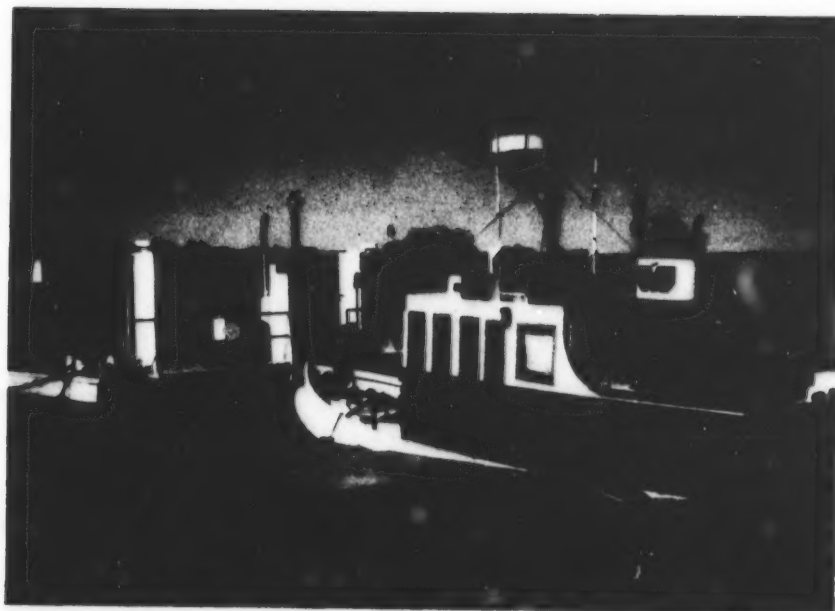
The vessel did not carry a valid radio license nor was the operator properly certificated to operate the radiotelephone as required by the Radio Act and General Radio Regulations.

None of the above deficiencies contributed to the casualty.

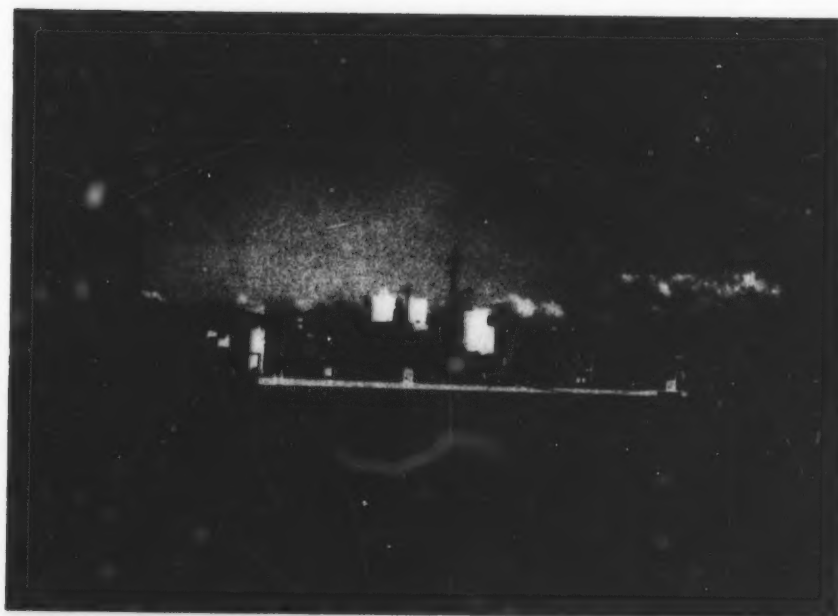
The operator of the "DEBBIE-CIN" took seamanlike action to save the "MARGRO II" in that he beached the vessel and obtained pumps.

His action of going below decks to attend to the hoses without a breathing apparatus was foolhardy, and could have cost him his life.





"DEBBIE-CIN"



"MARGRO II"

## "FIDELITY"

Fire in engine-room, in the St. Lawrence River,  
July 3, 1987.

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### Summary

The "FIDELITY" is a five-hold, five-hatch general cargo vessel, of 9,306 gross tons, built in the UK in 1970 and now registered in Limassol, Cyprus. Her machinery spaces, accommodation and bridge are located aft.

On July 3, 1987, the "FIDELITY" departed Quebec City with a cargo of milk products destined for Calabar, Nigeria. At approximately 1945 that evening, with the vessel making about 9 knots through the water and coming up to the entrance to the Saguenay River, smoke was observed in the engine-room coming from the area behind the electrical panels of the control-room. An oiler was sent to alert the master and the chief engineer while the second engineer attempted to fight the fire with a portable fire extinguisher. Realizing that the fire was out of control, the second engineer stopped the main engine, the generator, and the mechanical ventilation of the engine-room. Meanwhile, one of the seaman who was on watch, but below deck at the time, returned to the bridge and informed the duty officer of the situation. The pilot, realizing that the vessel was Not Under Command, had the port anchor dropped and relayed the information to VTS Les Escoumins.

On his arrival, the chief engineer ordered the evacuation of the engine-room whereupon the master, who was now on the scene, had all ventilation dampers and entrances to the machinery space closed and, when satisfied all personnel were clear, he activated the CO<sub>2</sub> smothering system release. The crew were ordered to assemble on deck, forward of the accommodation, with their lifejackets.

At 2009, the master requested assistance from the Coast Guard and at 2015 the CCGS "ISLE ROUGE" departed Tadoussac for the "FIDELITY". At this time, as a further precautionary measure, the starboard lifeboat was lowered and secured alongside No.2 hatch. The "ISLE ROUGE" arrived alongside at 2045 and another vessel, the "LIMNOS", stood by briefly.

At 2200, when the smoke emission was seen to have abated, a check of the fire area was made by the master and the chief and second engineers but, on finding that some small pockets of flame still remained, the machinery space was immediately vacated and again sealed. The "FIDELITY" remained a 'dead ship', and the "ISLE ROUGE" was requested to

remain alongside. At 2400 the fire was found to be completely extinguished and the crew were allowed to return to their cabins.

At 0830, the following morning, the master requested the assistance of tugs to tow the vessel back to Quebec City. The tug "CAPT. IOANNIS S" arrived at 1600, the "ISLE ROUGE" was released, and after a second tug, "DONALD P.", arrived at 1645, arrangements were made for a tug to supply power to the windlass of the "FIDELITY". The anchor was weighed and the tow got under way at 2009. The "FIDELITY" was secured at Section 31 in the Port of Quebec at 1420, on July 5. After her arrival the second engineer was taken to hospital because of second degree burns to his hand sustained while fighting the fire. He was treated and released. There was no pollution attributed to the fire and repair costs were estimated to be in the order of \$600,000.

#### Findings

It is not possible to determine the precise cause of the fire in the main switchboard but it would appear that it resulted from either one or a combination of more than one of the following:

- malfunction in the basic electrical components possibly, relays;
- deterioration in the electric wire insulation, when bunched, causing arcing;
- poor housekeeping, which may allow lodging of dust in the cracks of hardened insulation, creating short-circuiting; or
- replacement electrical equipment of insufficient capacity.

#### Other Findings

Crew evacuation, assembly on deck, and precautionary life-saving measures taken were proper.

Engine-room entry to check the fire status without the use of breathing apparatus and lifelines was not consistent with safe working practices.

Assistance provided by the CCGS "ISLE ROUGE" was efficient and professional.

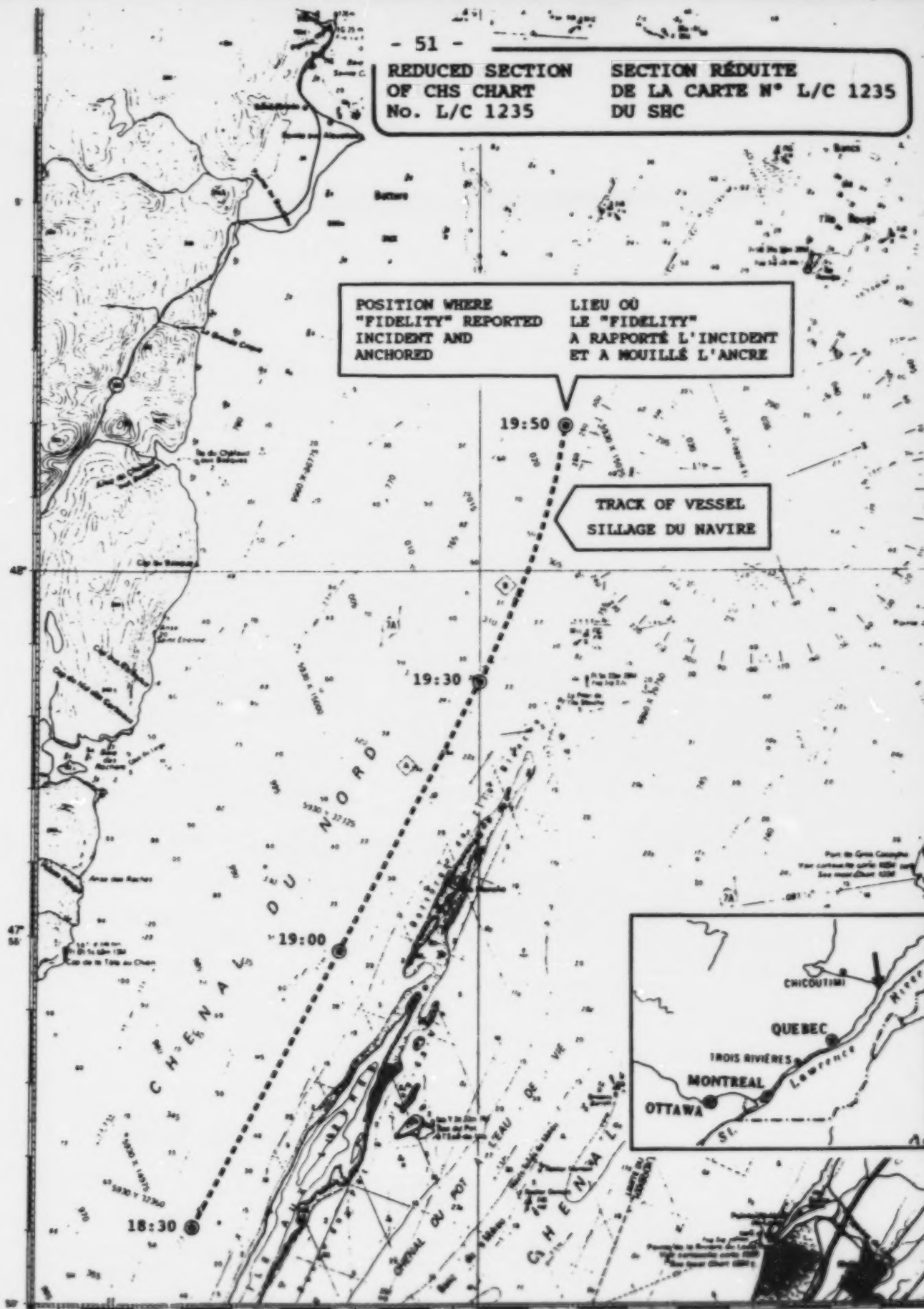
REDUCED SECTION  
OF CHS CHART  
No. L/C 1235

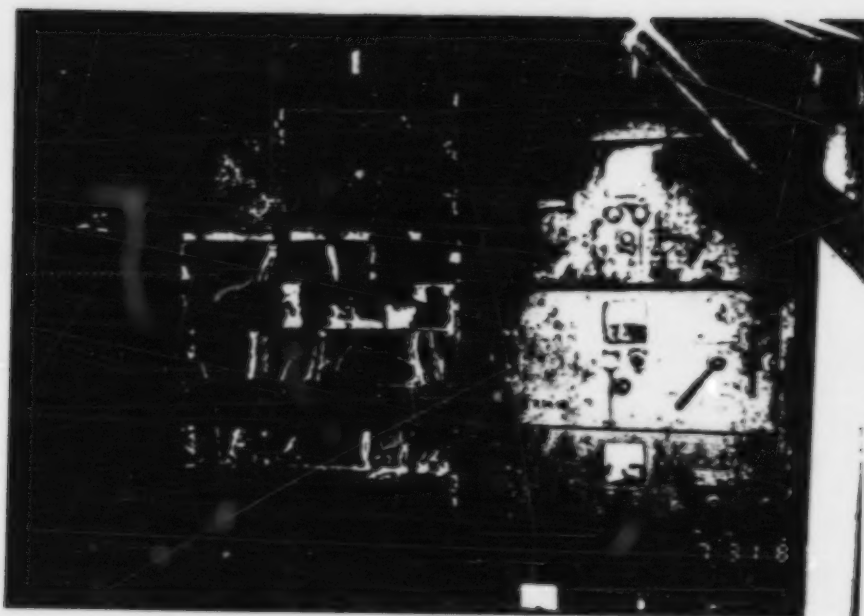
SECTION RÉDUITE  
DE LA CARTE N° L/C 1235  
DU SHC

POSITION WHERE  
"FIDELITY" REPORTED  
INCIDENT AND  
ANCHORED

LIEU OÙ  
LE "FIDELITY"  
A RAPPORTÉ L'INCIDENT  
ET A MOUILLÉ L'ANCRE

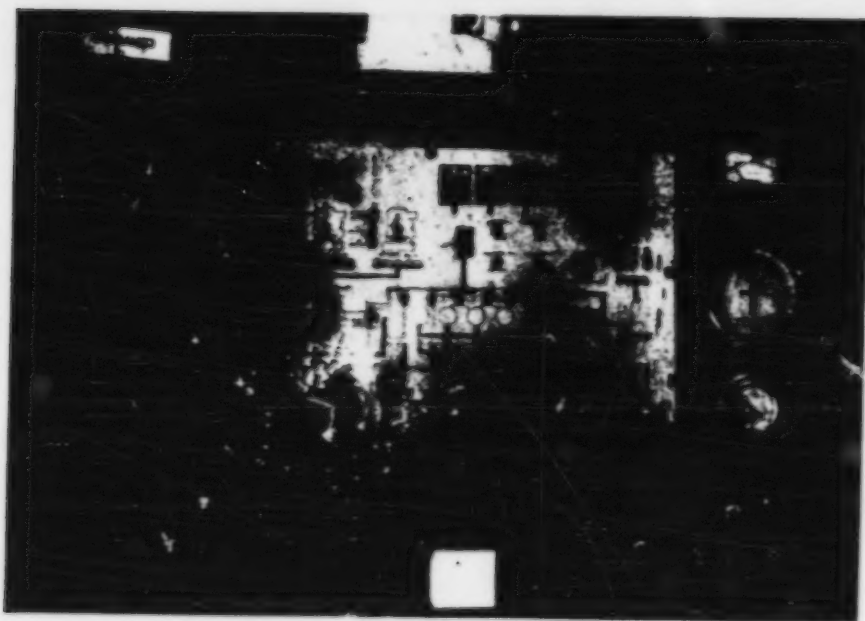
TRACK OF VESSEL  
SILLAGE DU NAVIRE





Switchboard front panel No. 2.

Panneau avant n° 2 du tableau de distribution.



Control console aft.

Console de commande arrière.

**CCGV "SIMON FRASER"**

**Discovery of a fracture in the deck and hull plating off  
Mont Louis, Quebec, January 5, 1987.**

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**Summary**

In the spring of 1986, the CCGV "SIMON FRASER" resumed service following a mid-life refit during which time, the 1,353 gross ton ice-breaker was converted into a search and rescue vessel capable of manoeuvring in ice.

On January 4, 1987, the vessel sailed from Baie Comeau on a patrol in the lower St. Lawrence River. The vessel proceeded at a moderate speed and encountered ice to the east of Pointe des Monts. On arrival off Mont Louis on the south shore the following morning, the "SIMON FRASER" stood by a vessel immobilised with engine failure.

The wind was from the north-west at 20-25 knots, the air temperature was -6°C and the sea was covered with ice, 10 cm to 20 cm thick.

While making his rounds at 0930, a crew member of CCGV "SIMON FRASER" discovered a crack in a port stringer plate on the boat deck and immediately informed the master.

The crack in the boat deck plating extended approximately 43 cm inboard from the ship's side and downward from the deck approximately 33 cm into the hull plating. The crack appeared to have originated at the after end of the freeing port in way of frame 59.

When the vessel, previously immobilized, was ready to sail, she requested an escort to Sept Iles to undergo repairs. However, before leaving for Sept Iles, CCGV "SIMON FRASER" had a small flat bar welded across the crack on the hull plating near the deck to better observe the stress at the crack position.

At about 2330, both vessels stopped for the night because the escorted vessel had experienced a steering-gear malfunction and progress through the ice was very slow.

At 2045, January 6, the "SIMON FRASER" reached Sept Iles. The following day, a ship inspector from the Canadian Coast Guard Ship Safety Division determined that temporary repairs could be carried out on site but that permanent repairs to be carried out in Quebec City should be effected as soon as possible.

The trip between Sept Iles and Quebec City was uneventful and although the crack remained unchanged, the flat bar

welded in place, had also started to fracture.

There was no pollution as a result of this incident.

### Findings

On January 5, 1987, the CCGV "SIMON FRASER", which had been assigned to search and rescue operations, was on patrol off Mont Louis on the south shore of the St. Lawrence River when a crack was discovered which extended into the port stringer plate of the boat deck as well as into the adjacent sheer strake plating.

It would appear that the crack was the result of a sudden increase in the concentration of local stresses caused by the following coincidental and cumulative factors:

- the vessel was under way in ice of 20 cm thickness, her hull was oscillating longitudinally and her engines transmitted intermittent vibrations to the structure;
- a survey showed that the vessel was hogging at the time, but that the bending stresses in the structure were well below the permissible limits;
- while undergoing a mid-life refit in 1985, the recess for the stowage of the port accommodation ladder was eliminated. Due to excessive grinding of a weld at one end of the freeing port in the relocated bulwarks, a notch was created;
- there was an abrupt discontinuity of the plating in way of the freeing port. The ends were cut at right angles to the upper edge of the sheer strake; and
- there was evidence of deterioration such as pitting of the deck plating in way of the crack.

### Other Findings

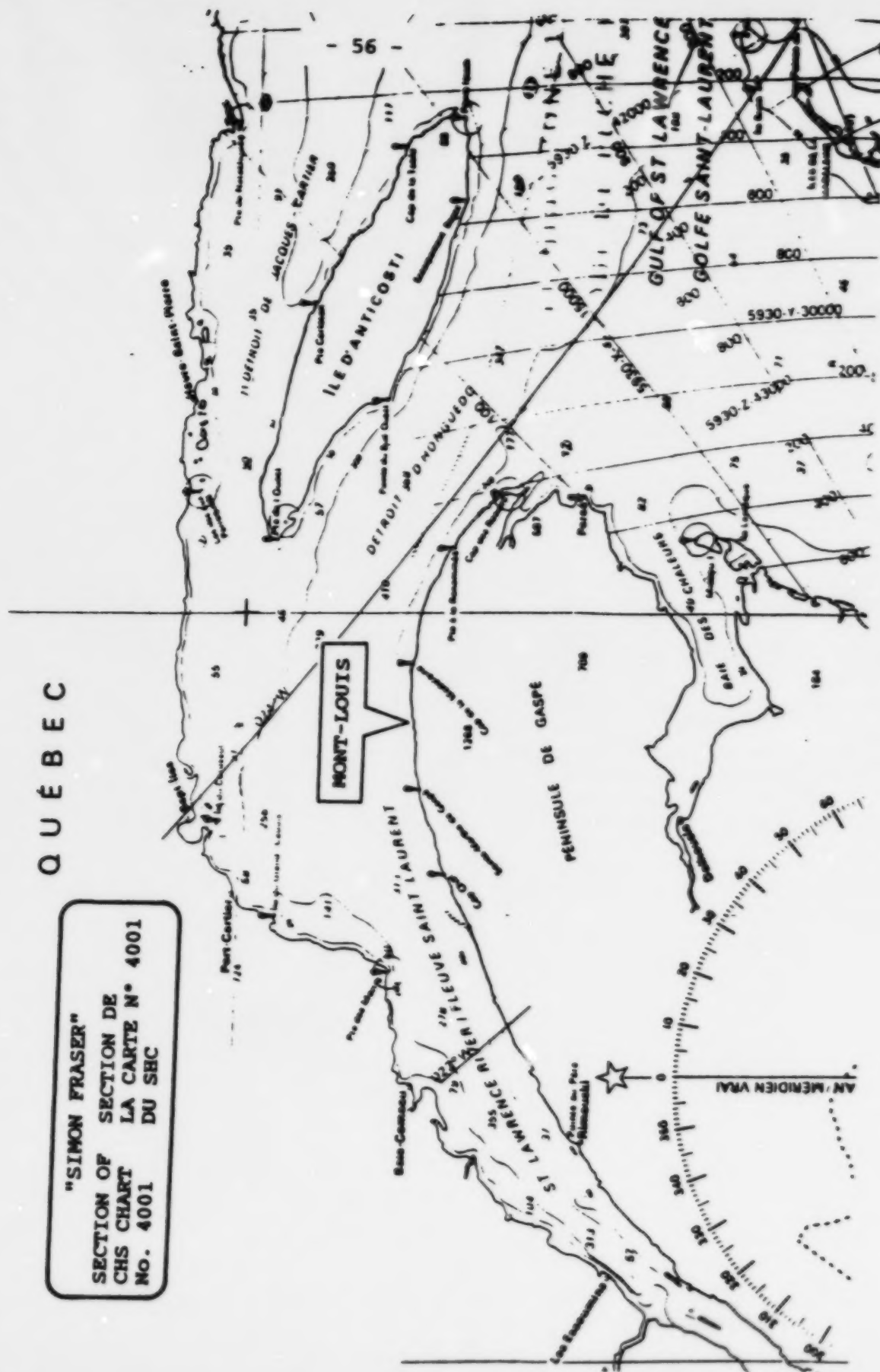
The starboard side on the boat deck had also been modified by eliminating the recess for the accommodation ladder and an inspection had revealed no signs of distortion or cracking in the corresponding area.

The ends of all other freeing ports on the boat deck had been cut at right angles to the upper edge of the sheer strake.

Since the crack developed in way of the superstructure, the vessel's integral hull-girder was not weakened.

**"SIMON FRASER"**

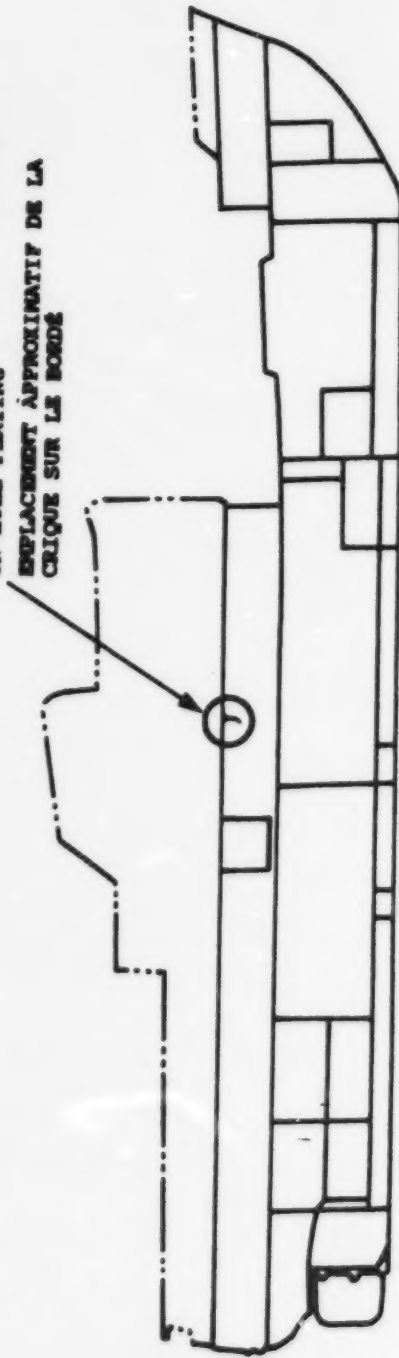
SECTION OF  
CHS CHART  
No. 4001



CCGV NGCC  
"SIMON FRASER"

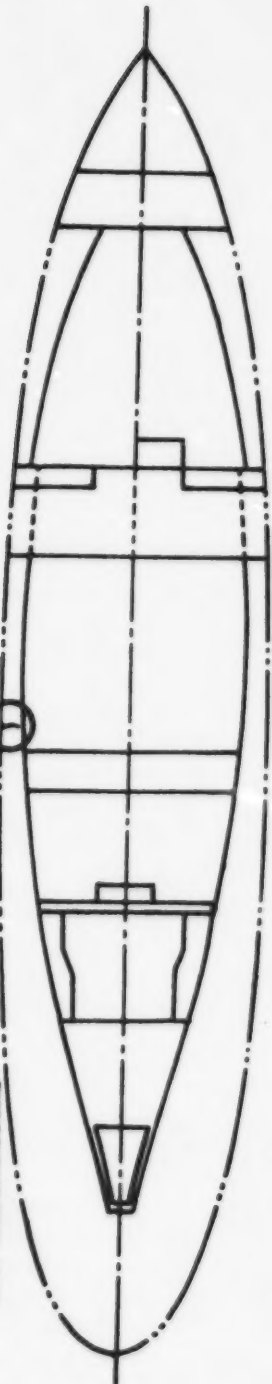
OUTLINE GENERAL ARRANGEMENT  
PLAN D'ENSEMBLE

APPROXIMATE LOCATION OF FRACTURE  
ON HULL PLATING  
EMPLACEMENT APPROXIMATIF DE LA  
CRIQUE SUR LE BORDÉ



PROFILE  
COUPE LONGITUDINALE

APPROXIMATE LOCATION OF  
FRACTURE ON BOAT DECK  
EMPLACEMENT APPROXIMATIF  
DE LA CRIQUE SUR LE PONT  
DES EMBARCATIONS



PLAN VIEW  
VUE EN PLAN

**"MULPHA SEREMBAN"**

**Striking of the Second Narrows Railway Bridge,  
Vancouver, B.C., May 26, 1987.**

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**Summary**

The Malaysian registered "MULPHA SEREMBAN" is a single screw geared bulk carrier of 20,492 gross tons, built in Japan in 1976. She has five holds and five hatches, a raised forecastle forward and the crew accommodation, navigating bridge and engine-room are located aft.

Close east of the vehicular bridge at the Second Narrows in Vancouver Harbour is the Second Narrows Railway Bridge which was built in 1967 and which has a vertical lift span over the navigable channel. Although the railway bridge has an advertised vertical clearance of 46.00 m above HHW LT with the span raised, the 'limiting height factor' for a vessel transiting the Second Narrows bridges is 44.00 m which is the advertised clearance of the highway bridge.

On May 26, 1987, the "MULPHA SEREMBAN" was to shift from 'A' anchorage in Vancouver Harbour to 'K' anchorage, east of the Second Narrows. She was in a partially ballasted condition with draughts of 2.85 m forward and 3.90 m aft. The vessel's pilot reported to Vancouver VTS by VHF radio-telephone and received clearance to transit Second Narrows at 1950 when the state of the tide would be favourable for such a passage. The pilot also contacted the Second Narrows Railway Bridge on VHF and requested a full lift of the span.

At 1900 the "MULPHA SEREMBAN" was underway at slow speed and as she proceeded through the Second Narrows Movement Restriction Area (MRA) the railway bridge was observed to be displaying the proper lights indicating that the span was fully raised.

At 1951, approximately 31 minutes after high water and about the time of slack water at Second Narrows, the "MULPHA SEREMBAN" passed under the highway bridge. About one minute later, at 1952, with the vessel approximately in mid-channel, the RDF sense and loop antennae and the upper radar scanner on the main mast of the "MULPHA SEREMBAN" struck the underside of the Second Narrows Railway Bridge. The vessel continued on to 'K' anchorage and the relevant authorities were notified by the master and the pilot.

It transpired that since May 18, 1987, the bridge was not being raised higher than a level of approximately 42.7 m above HHW LT due to a misunderstanding between bridge maintenance staff and the bridge operational staff regarding a faulty limit switch. The harbourmaster, Vancouver VTS and

other pertinent authorities had not been notified of this problem.

No one on board the "MULPHA SEREMBAN" had calculated the vessel's air draught for passing under the bridges. Calculations after the fact indicated that the "MULPHA SEREMBAN" had an air draught of approximately 46.03 m to the top of her RDF sense antenna and the bridge had a vertical clearance of approximately 43.38 m at the time of striking.

The "MULPHA SEREMBAN" loaded and departed for Mazatlan, Mexico, on June 1, 1987. Her certificate was endorsed allowing her to sail for a period of up to two months with her RDF and one radar set inoperative due to spare parts being unavailable.

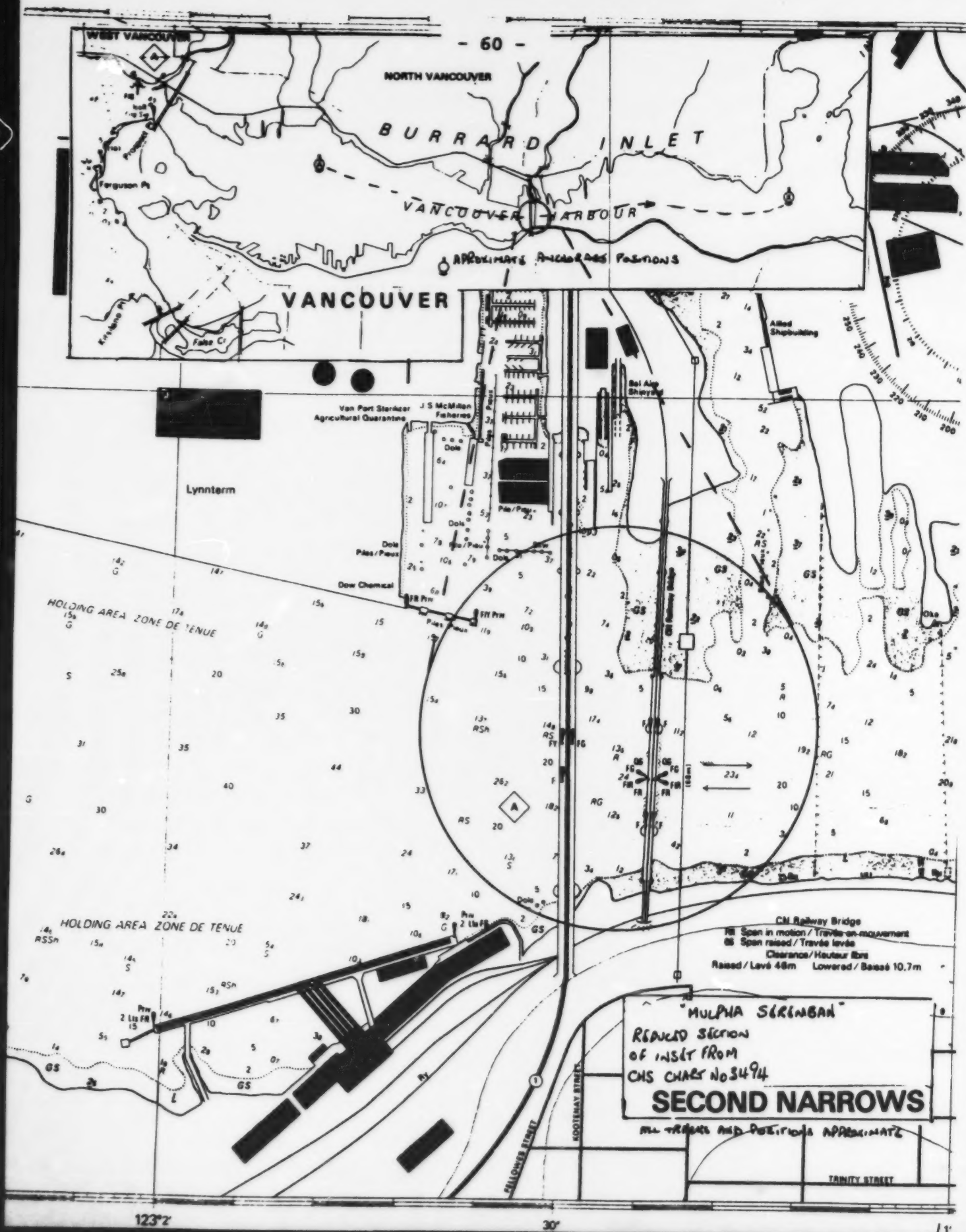
Damage to the "MULPHA SEREMBAN" was estimated to be about \$10,000 but the Second Narrows Railway bridge sustained no apparent damage.

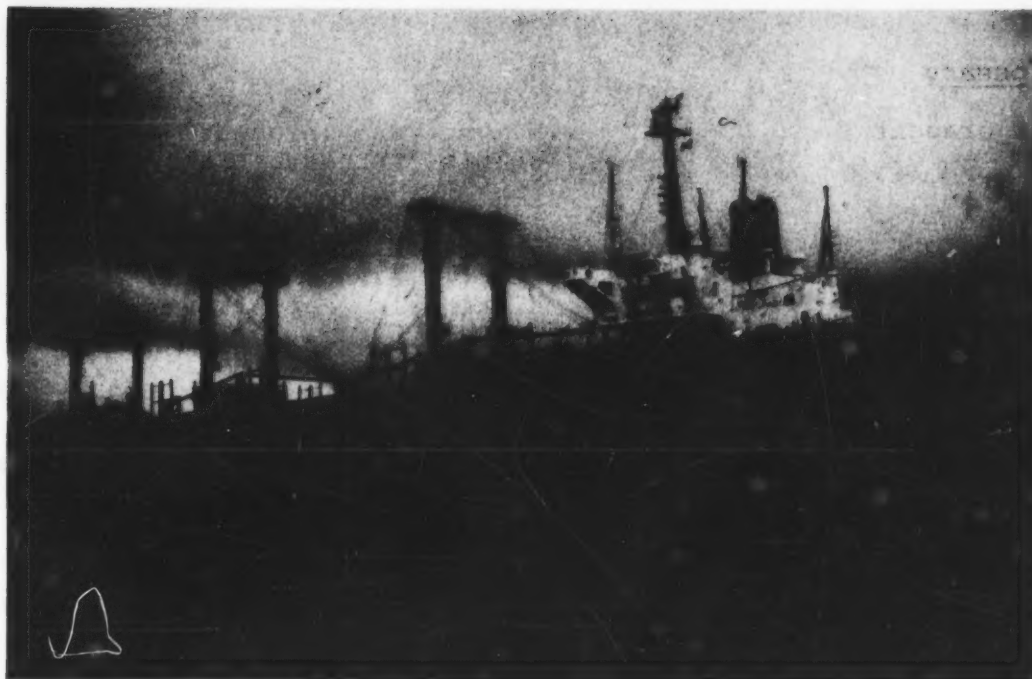
#### Findings

On May 26, 1987 the Malaysian motor vessel "MULPHA SEREMBAN", with a Canadian pilot on board, struck the underside of the partially raised span of the Second Narrows Railway Bridge in good visibility and weather conditions. Damage to the vessel was slight and no damage was sustained by the bridge.

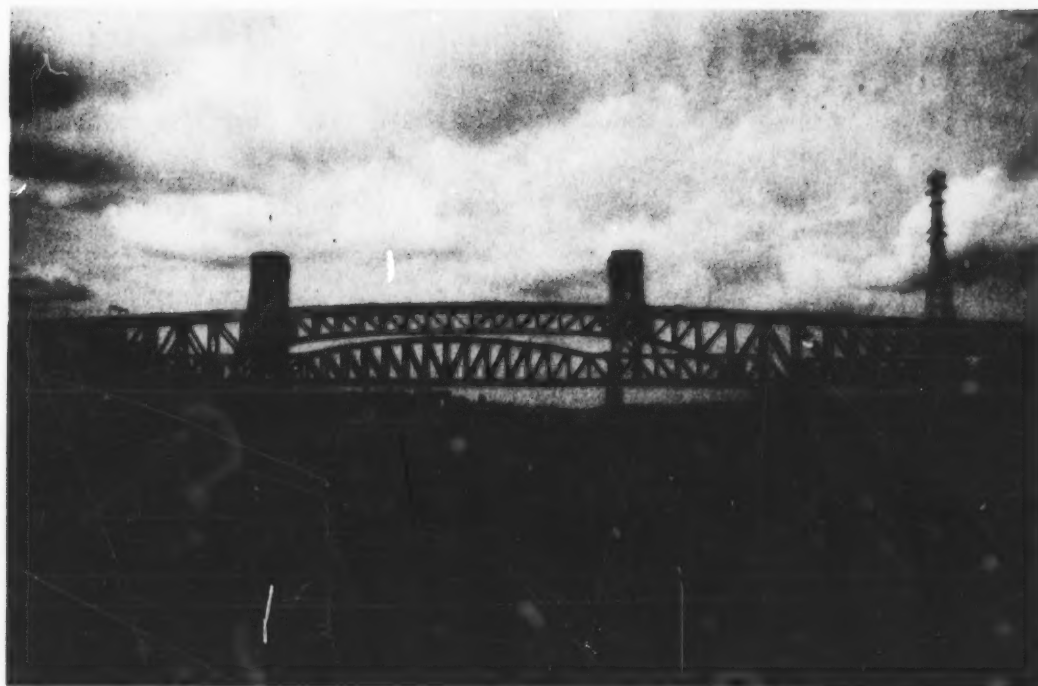
It would appear that the following factors contributed to the striking:

- no one on board the "MULPHA SEREMBAN" checked the vessel's air draught against the limiting height factor for a complete transit of the Second Narrows Bridges to ensure compliance with the MRA Standing Orders;
- no one responsible for the Second Narrows Railway Bridge reported to the pertinent authorities, as required by the National Harbours Board Operating by-law, that the bridge span was not being utilized in the fully open position between May 18-26, 1987;
- the Second Narrows Railway Bridge was not raised to its full height due to a misunderstanding between operating and maintenance staff; and
- the vessel's air draught was above the limiting figure, as given in the MRA Standing Orders, for a complete transit of the Second Narrows Bridges.





"MULPHA SEREMBAN"



Second Narrows bridges from the east.  
Les ponts de 'Second Narrows' vus de l'Est.

Glossary

|                       |                                                                                       |
|-----------------------|---------------------------------------------------------------------------------------|
| Air draught           | Height of highest point of ship's structure above water-line                          |
| Beaching              | Intentionally putting a vessel (partly) ashore to prevent its sinking in deep water   |
| Blind pilotage regime | Procedure for navigating in restricted visibility                                     |
| Bow thruster          | Athwartship thrust propeller located forward                                          |
| (Towing) bridle       | Span of chain or rope with both ends secured                                          |
| CCGC                  | Canadian Coast Guard Cutter                                                           |
| CCGS                  | Canadian Coast Guard Ship                                                             |
| CGRS                  | Coast Guard radio station                                                             |
| Cable                 | One-tenth of a nautical mile                                                          |
| Clutter               | Echoes from waves/precipitation appearing on a radar display                          |
| Damper                | Device in air duct to control flow of air                                             |
| EPIB                  | Emergency position-indicating buoy                                                    |
| EPIRB                 | Emergency position-indicating radio beacon                                            |
| HHW LT                | Higher high water - large tides                                                       |
| Hog                   | Bending (arching) condition of a vessel with ends more deeply immersed than amidships |
| Kort nozzle           | Cylindrical casing fitted around propeller                                            |
| Lighter               | Discharge (cargo) into barges                                                         |
| Messman               | Member of ship's crew whose duties include meal service and cleaning of accommodation |

|           |                                                                         |
|-----------|-------------------------------------------------------------------------|
| MRA       | Movement Restriction Area                                               |
| OOW       | Officer of the watch                                                    |
| Packer    | Vessel used to collect and transport fish                               |
| RDF       | Radio Direction Finder                                                  |
| Rectifier | Device changing electrical current from AC to DC                        |
| Relay     | Automatic energized electrical contact                                  |
| Sat-Nav   | Satellite navigator                                                     |
| Strake    | Line of plates extending (the greater part of) the length of the vessel |
| Stringer  | Fore-and-aft strength member girder                                     |
| VTs       | Vessel traffic services                                                 |